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A Transformative Journey: The Lived Experience of Healthcare Learners Participating in Pain Management Education

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Health and Rehabilitation Sciences

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Abstract

There is little emphasis on pain management education for healthcare providers. In September 2019, the Master of Clinical Science (MClSc) program in Advanced Healthcare Practice at Western University in London, Ontario introduced a new, “Interprofessional Pain Management” (IPM) field. The program follows a competency-based framework, and the learners are all practicing healthcare providers with a special interest in pain. Part of the purpose of this thesis is to describe the process of development and implementation. The objective is to provide educators and healthcare providers an in-depth look at how the pain education is experienced. This includes exploring the lived experience of physiotherapy students participating in a pain elective course, the lived experience of the first cohort of the IPM field, and again the first cohort of the IPM program as they experience the phenomenon of sudden change in clinical encounters including mentorship during COVID-19. The three studies all followed a hermeneutic phenomenological research design. Single semi-structured in-depth interviews were audio-recorded and transcribed verbatim. Each study was supported and guided by the work of van Manen (2016) for analysis and in identifying themes. Themes are described in each study. In sharing the narratives of the participants from all three studies, we hope it encourages educators and healthcare providers to reflect deeply on their current pain management training and practice.

Keywords

Post-professional education, clinicians, healthcare providers, practitioners, students, learners, physiotherapy, physical therapy, pain, pain management, pain science, pain education, competency-based education, phenomenology, qualitative research, clinical encounters, clinical practice, COVID-19.

Summary for Lay Audience

Pain is a complex phenomenon. Academic writings supports that there needs to be an improvement to how caring for people in pain is taught. In September 2019, a new program was created, Interprofessional Pain Management. This master's-level program was developed with the hope that it will help people working in healthcare improve how they treat and care for people in pain. In this thesis, three research studies were conducted. The first study looks at how physiotherapy students experienced taking a course on pain. The second study shares stories from the students who experienced the Interprofessional Pain Management program. The third study examines how the global pandemic, COVID-19 affected students who experienced the Interprofessional Pain Management program and how it changed the way they learned and worked.

Co-Authorship Statement

The studies in this thesis were co-designed, analyzed, interpreted, and written by Zoe Leyland with collaboration and guidance from Dr. David Walton and Dr. Elizabeth Anne Kinsella. Chapter 4 was previously published in the journal *Pain Medicine* and was co-authored with Dr. David Walton.

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Chapter 1

1 Learning the Dance of Developing and Implementing an Interprofessional Pain Management Competency-Based Master's Program

1.1 Introduction

Pain is one of the most common reasons patients visit their healthcare providers and inadequate education of healthcare professionals is a major and persistent barrier to effective and safe pain management ¹. From a 2013 study, on average, family practitioners in Canada treat 45 chronic pain patients per month ². Unfortunately, many clinicians are uncomfortable talking about pain or feel useless ³ and sometimes patients or clients feel that they are not being heard. Persistent pain has been described as a global burden as most often there is no definitive underlying pathology present, which often creates additional communication problems for clinicians that may be trying to explain pain and for patients trying to understand their experiences ⁴. There is some qualitative research that has provided indication that people living with pain often feel invalidated or that their healthcare provider believes their pain is exaggerated or imagined ⁵. Feelings of disbelief and a lack of validation can be devastating for a person living with pain. Threat and meaning are often relational and pain is a mode of self-regulation that unfolds when there is a serious threat to sense-making systems ⁴. Persons living with pain, bystanders, family, friends, and clinicians want to comprehend those verbal and non-verbal ways of communication to make sense of pain ⁴. Thankfully, understanding a patient's perspective and their story can provide practitioners and caregivers valuable information on how to engage best in creation of healing in several contexts for patients and their families in practice ⁶.

In a step towards unpacking what the experience of living with pain may be, it is important to understand the current curricula for pain care providers. According to the Institute of Medicine's *Relieving Pain in America*, health professionals need and deserve greater knowledge and skills to contribute to the transformation of the perception and treatment for persons living with pain ⁷. Current challenges in pain education have

indicated a lack of resources and traditional models focus the majority on diagnostic indicators of pain rather than a multidimensional understanding, assessment, management, and clinical conditions ⁷. In a recent review of medical school curricula, researchers found that 96% of medical schools in the United States and in Canada had zero dedicated, compulsory pain education ⁸. The current pain content in programs or courses to determine what gaps exist with regard of pain assessment and management of diverse patient groups across the lifespan has been reviewed in several studies including the work of Watt-Watson et al. in *Pain Medicine* ⁷. In a study on the major deficiencies in pain education for health professionals, three educational recommendations were addressed including the expansion and redesign of education programs to transform the understanding of pain, improving the curricula and education for healthcare professionals, and increasing the number of health professional with advanced expertise in pain care ⁹. While reviewing medical education is important, as pain is a complex experience, research has shown that it is best managed as an interprofessional approach ¹⁰, which is why all healthcare professions are considered when reviewing the lack of pain management education. Furthermore, effective pain management itself can be complex, requiring collaborative approaches that exceed the experiences of one profession, ¹¹ but the need for interprofessional practice in healthcare has been discussed for decades and studies have shown that effective interprofessional team practice can not only improve job effectiveness and satisfaction while also decreasing patient hospitalization, re-admissions, and mortality ¹². The challenge continues to be the paucity of models in pain education that consider the interprofessional context ¹¹.

1.2 Background

In September 2017, as part of my PhD requirements, the journey to develop a master's-level Interprofessional Pain Management field within the Advanced Health Care Practice program at Western University began. A working meeting took place with clinicians, researchers, and educators in December 2017. This meeting looked into answering the question, "how do we make this process better?" Persisting deficits in curriculum content and competencies have been identified including understanding pain mechanisms and the assessment and management of pain across the lifespan ⁹. The process in question refers

to learning in a competency-based education structure rather than a traditional time-based framework that includes courses, credits, and didactic teaching. Competency-based education is a modern approach and is a distinctive feature of contemporary professional, vocational, and continuing education ¹³. Competency-based education defines competencies that reflect the needs of stakeholders including societal, professional, and institutional goals to guide curriculum and assessment ¹⁴. The program we were working towards producing would enable post-professional learners to use their educational activities as the learning vehicle and to work towards leveraging a work-based learning model where everything learned is practical and applicable. The group established that the future learners must be a clinician and have at least 3 years of clinical experience. Learners would indicate what they are currently missing in their clinical practice and how they would apply the program to practice as real-world applications would be prioritized. Research has indicated that it is important to select pain issues throughout educational training that are relevant to learners and reflect real-world complexity and the multidimensional nature of the issue to guide appropriate assessment and management approaches ⁷.

Throughout the working meeting, participants identified that patient-centred care works best hand-in-hand with interprofessional education and was supported by many of the attendees. In Canada there is a call for a shift towards patient-centred and interprofessional primary care ¹⁵. With the complexity of pain, interprofessional care may be more common for patients as collaborative approaches may be required given that one provider may not meet all the needs of the patient ¹¹. True interprofessional experiences were described in the working meeting as immersing learners into experiential practice and collaboration taking place. Literature suggests that interprofessional learners have the ability to co-create solutions to real-life issues by way of online learning; the learners can link between other healthcare providers, patients, and evidence-based information, which may make this type of complex problem solving desirable among professionals ¹⁶. Narrative medicine and therapeutic communication were also recommended as useful instruments. In valuing narratives and storytelling, the biopsychosocial approach was also discussed as the gold standard of pain management as this encompasses a more holistic

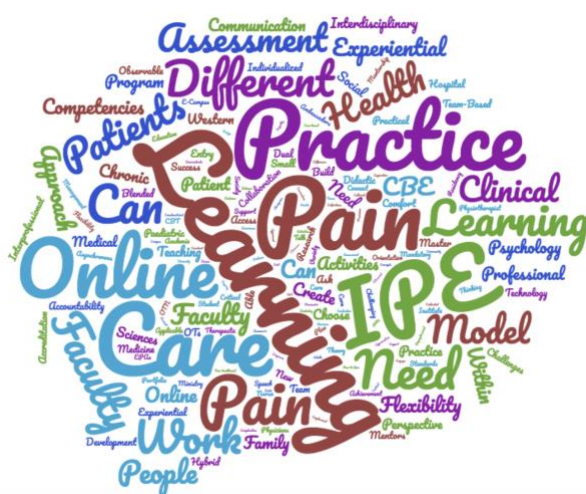
perspective of the human experience of pain. In the biopsychosocial approach, pain is viewed as a complex, multifaceted experience influenced by a dynamic interplay among a person's anatomy and physiological state, thoughts and emotions, previous health history, behaviours, social interactions and support system, and cultural influences ¹⁷.

As the future Interprofessional Pain Management field would be completely online and distance-based education, creating a strong digital network was identified as an important component by the working meeting attendees. To encourage online and distance learning, the need to develop a community of scholars who recognize the significance of collaboration and creating a supportive environment would be critical ^{18,19}. While challenges may arise, advantages to distance education include: flexibility, individualization, meets varied need of healthcare providers, decrease in travel time, increased variety of student participation including international students, rapid feedback, and ease of access ^{16,20,21}. As technology has evolved, online formats provide learners an easy accessible platform to educational material as per their convenience, in learners' preferred environments and repeatedly ²². Content creation was also outlined, and participants of the working meeting suggested inclusion of a variety of materials each week including podcasts, online debates, videos, and online virtual interactions with patients in clinics.

Both academic mentors and clinical mentors would be important and essential components of the program. Small group discussions, group activities, research projects, and reflective practice were all highly valued from the attendees and who encouraged adoption into the future program. Finally, a metaphor was established and frequently used by attendees to help overcome some of these challenges and to make sense of the creation process, which included, "learning the dance," and exposure to maestros and amateurs. This metaphor is similar to Schön's, *From Technical Rationality to Reflection-in-Action*, where the swampy lowlands are those indeterminate zones that include uncertainty, uniqueness, instability, and value conflicts that practitioners find themselves in that can be messy, confusing problems that defy technical solution ²³. Schön's theory of reflective practice has received exceptional attention in health professional education literature ²⁴. In learning the dance or living within the swampy lowlands, practitioners are encouraged

to reflect on their experiences, use trial and error, intuition, and muddle through. Schön's attention to the practitioner experience and the epistemology of practice that begins with active processes that involve the complexity of practice offers a crucial and pivotal challenge to more traditional concepts of professional knowledge ²⁴.

Figure 1: Word Cloud from Working Meeting



This word cloud was created to provide a visual from all notes taken at the working meeting.

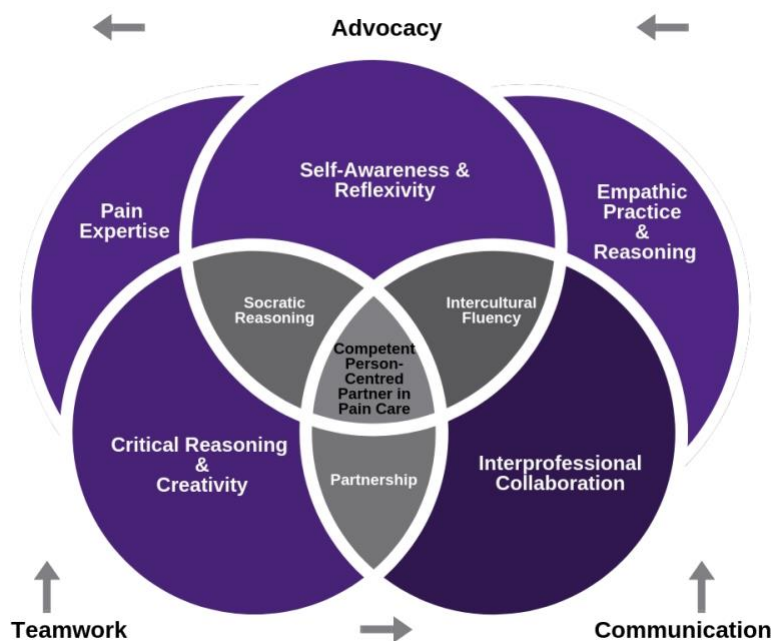
1.3 Implementation Process

The implementation process included several steps including meeting with a variety of levels from Western University and engaging with experts on broad fields to further define the core competencies of the program while exploring pedagogical practices best suited for distance/online education. In each meeting the process was recorded through notetaking. The original competencies started with interprofessional collaboration, communication, empathy, person-centred care, advocacy, critical reasoning & creative problem solving, reflexivity, pain expertise, and intercultural fluency, which later evolved into five core competencies. Participants in the working meeting also suggested to include discussions on transformation, clinical roles, interprofessional professional conflict, power differential, Intergroup Contact Theory, and find champions or change agents to demonstrate the competencies. The Intergroup Contact Theory has been predicted to reduce intergroup prejudice when the contact situation meets all four

conditions including equal status between groups, determining common goals, elimination of competition between groups, and authority sanction for one contact ²⁵. In finding champions or change agents, working meeting attendees also stressed the need to create a list of experts who would serve as key participants of the Interprofessional Pain Management field. Each of these experts are listed in the acknowledgement section of this thesis (see page v).

In developing a clear vision for the program with help from experts, faculty, and staff, the proposed field was presented to the appropriate stakeholders to move forward to present a major modification to an existing graduate program. See Appendix 1 for complete document. Approval for the major modification was given May 2019. After numerous consultations from experts in various fields the five key competencies were established: 1). *Critical Reasoning and Creativity*. 2). *Empathic Practice and Reasoning* 3). *Self-Awareness and Reflexivity* 4). *Interprofessional Collaboration* 5). *Pain Expertise*. See Figure 2 for an image demonstrating the competencies. In order to determine the mastery of each competency, EPAs (entrustable professional activities) were also consulted and established with the understanding that they may be modified and adjusted throughout the program's lifetime. Co-developers of the program also established that each learner would complete a clinical mentorship experience and create a scholarly product that demonstrates learner's abilities to appraise new information to be applied to practice. In September 2019, the first cohort of the Interprofessional Pain Management commenced. See Appendix A Entrustable Professional Activities with learning activity examples.

Figure 2: Interprofessional Pain Management Framework



This figure includes the five core competencies of the IPM field and the overall goals.

1.4 Thesis Purpose

The purpose of this thesis is to describe participants' learning experiences in pain education in pre- and post-licensure healthcare professionals. Comprehensive pain assessment and management are deemed essential to reduce the prevalence and burden of pain, and new strategies involving all healthcare professionals are required to support these changes ²⁶. Advancing pain education may be complex because of the range of knowledge and skills that a practitioner requires to be competent in pain management is both broad and varied, and the subject may be taught and evaluated from both a practice and theoretical aspect ²⁷. It is well documented that there is a gap between knowledge and practice in pain and a wider uptake of pain competencies is working to bridge the gap to produce healthcare providers who are competent in pain practice ²⁷. In exploring the lived experience of physiotherapy students participating in a pain elective course and the lived experience of learners participating in the first cohort of the Interprofessional Pain Management master's-level field with an addition of the real-life challenges of the COVID-19 era, the goal is to critically explore and interrogate a co-constructed

understanding of the lived experiences of current or future healthcare providers as they participate in a new pain management program. It is important to recognize the significance of community and that collaborative teams can be demonstrated through narratives that are designed to enhance an understanding of interprofessional approaches to pain care ⁷. In sharing the narratives of the participants from all three studies, we hope it fills the gap of the unknown in participating in pain management while exploring the stories and hear the lived experiences. The goal of this work is to also inspire and encourage other healthcare providers and educators to reflect on their current pain management training as well as their practice. Moving beyond an evaluation of pain education was important and transitioning towards a deeper understanding of the experiences to understand the perceived gaps in knowledge and skills regarding pain as many healthcare providers report their pain education to be lacking ²⁷. The power of phenomenological text lies that dialogue can effect in our understanding including those reaches of understanding that are somehow pre-discursive and pre-cognition and thus less accessible to conceptual and intellectual thought ²⁸. By examining an experience as it is subjectively lived, new meanings, and appreciations can be developed to inform, or even re-orient how we understand the experience ²⁹ and how we share this could have a major impact on how pain is both understood and practiced.

Thus, exploring clinicians' participation in pain management education and conducting qualitative research following a hermeneutic phenomenology framework took place. Within this methodology, we inquired into participants' experiences of participation in the course to better understand each learner's perspective and story. In using an interpretivist phenomenological approach, we follow the idea that phenomenology prioritizes how the human being *experiences* the world, such as how the patient or learner experiences pain ³⁰. The use of hermeneutical phenomenology enables the exploration of participants' experiences with further abstraction and interpretation based on researchers' theoretical and personal knowledge ³¹. To understand the meaning of what is being communicated, especially when intentions, values, moral issues, and feelings are involved, this may require critical reflection of assumptions ³². The stories from participants are presented and the process of understanding and interpretation can be a

complex and dynamic structure that is implicated in our awareness and understanding of text and ourselves in the world ¹³. The research writing works to integrate narratives, rich description, illustrative quotations, and a wider philosophical discussion ³³. Interestingly, phenomenology has been described as a valuable approach to research in health professional education ²⁹, which is one reason why this approach to research has been taken. Phenomenological research can broaden our understandings of the complex phenomena, such as pain, involved in learning, behaviour, and communication ²⁹. Another reason for taking a hermeneutical phenomenological approach to identifying and exploring the phenomenon of the lived experience of participating in pain management education, is that the researcher's past experiences and knowledge are valuable guides to inquiry ²⁹.

This thesis comes from a place of my personal lived experience with chronic pain. After years of misdiagnosis, invalidation of my own pain, and navigating the healthcare system primarily on my own, I felt a responsibility as an academic and researcher to strive towards changing the way those living with pain receive care. It is important to continuously recognize that researchers bring their lived experience, understandings, and history as their way of being-in-the-world and many cannot help but bring their own involvement into the research, which challenges them to not eliminate these experiences as a bias, but rather a focus on more intense insight ³⁴. The experience in writing this thesis and completing a doctoral program has encouraged me to continue to advocate for those living in pain, including myself. My intention in writing this is to make a positive impact, whether it is small or on a grand scale, in hopes that pain care education becomes deeply embedded within healthcare worldwide. I understand that the challenges of moving the pain education agenda forward are significant worldwide and resources are needed to help educators in curriculum development ¹¹, which is where I see myself going forward in my academic career.

1.5 Thesis Layout

The integrated article format is used to organize this thesis. The subsequent chapters are divided into three studies. Chapter 2 includes the lived experience of Master of Physical

Therapy students participating in a pain elective course, Understanding Pain in Rehabilitation. Chapter 3 is the lived experience of the first cohort of the Master of Clinical Science in Advanced Health Care Practice participating in the new Interprofessional Pain Management field. Chapter 4 is a commentary published in *Pain Science* on the lived experience of the first cohort of the Interprofessional Pain Management field and their lived experience in participating as mentees as well as their clinical encounters during the COVID-19 era.

1.6 Conclusion

Writing this thesis and co-developing the MClSc IPM program with my supervisor, Dr. Dave Walton has been a tremendous honour. Hearing and learning participant's stories of their experience of participating in pain education was a true privilege. Being an active member and learning from the pain research community has been an exceptional experience and I have met many wonderful colleagues along the way. Attending the International Association for the Study of Pain (IASP) World Congress in 2019 and being a member of the community has a wonderful learning experience. I believe that I have immersed myself fully in my research. Reflective practice took place as I kept a reflective online journal all four years of my PhD where I wrote about powerful and thought-provoking class discussions, readings, and dialogue with like-minded learners. One quote from the first month of my doctoral education states, "Thinking a lot about reflection as an actionable movement. Not only do I want to reflect and absorb what I am learning through my PhD, I want to take action. I want to take constructive feedback and apply it to bettering myself and my practice. I want to grow, evolve, change, learn, stumble, get up, make mistakes, overcome obstacles, and find a breakthrough. I really want to make an impact, but that need to start with me." Looking back now, I know that I did all that I hoped to accomplish. While on my academic journey I also read various narratives on pain, one particular book from Gabrielle Jackson's, *Pain and Prejudice: A Call to Arms for Women and Their Bodies*, has greatly resonated with me. Jackson states that, "pain isn't killing us, but it is denying us our full humanity"³⁵. I strongly believe that each person living with pain deserves a full life and receive competent person-centred partner in pain care.

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Chapter 2

2 “Maybe I Would’ve Been More Comfortable in my Ignorance?”: Exploring Future Physical Therapist’s Lived Experience of an Elective Pain Science Course

2.1 Introduction

Pain education for health care professionals has traditionally been suboptimal. A 2011 British survey revealed that, “the amount of pain education in the curricula of healthcare professionals are woefully inadequate”¹. Through the Master of Physical Therapy (MPT) program, at Western University (London, Canada), an elective course, “Understanding Pain in Rehabilitation (PT9551b),” has been available for physical therapy students in their senior year of study. The primary outcome for the course is a reflective diary that is used as both a pedagogical tool for internalizing knowledge and a summative evaluation tool. The course also supports students to undergo a transformative change in the ways they see themselves as ‘providers of pain management’ or ‘providers of physical therapy for people in pain.’

The pain elective course is built upon a critical social science perspective of pain and pain management, in which students are challenged to consider their role in pain management from a sociopolitical and contextual perspective, including an analysis of historical perspectives and power dynamics inherent in traditional approaches. In doing so, the course represents a departure from the theoretical basis of many prior courses in the MPT program. Where courses in the first four terms of the program tend to focus on developing technical skills of ‘doing physiotherapy’, the pain elective challenges learners with respect what it is to ‘*be* (or become) a physiotherapist’ using perspectives on pain as the lens through which to reflect. The reflective diaries are the platform for reflection and conceptualizing the newfound knowledge.

There is little research into physical therapy students’ experiences of learning about pain through a course that aims to foster critical reflection on the phenomenon. The purpose of this study was to examine the following question: What are students’ perceptions of

learning about pain and pain management through participation in a non-traditional pain elective course?

Figure 3: PT9551b Course Description

PT9551b is an elective course offered in Year II of the MPT program. The intent of this course is to allow participants to develop a deeper understanding of the pain experience and to understand the influence of pain on the sufferer, society, and the therapist. The participants will access several resources, including readings from the scientific literature, readings from the lay press, and video documentaries. The in-class hours will be structured as an open discussion rather than a pre-assembled lecture. The course manager will act as facilitator and be an active participant in the group discussion. Participants will keep a diary of their reflections on each week. Class participants will act as facilitators, with each participant acting as facilitator once throughout the course. The mark for the course will be a composite of the quality of the facilitated discussion, the quality and content of class participation, and the quality and content of the reflective diaries.

The pain elective course description from the syllabus.

Table 1: PT9551b Course Outline

Week 1	<p>Introduction</p> <p>Video and reflections</p>
Week 2	<p>Debate “Physiotherapy for pain management will reduce the impact of the opioid crisis”</p> <p>Open discussion on the stigma of chronic pain</p>
Week 3	<p>Salutogenesis, trauma, and chronic pain</p> <p>What is ‘Trauma-informed care’: can we create an infographic relevant to PT practice share?</p> <p>What is wellness-focused care? In what ways to PTs help patients optimize resilience?</p>
Week 4	<p>Models of pain: Where are the similarities? Where are the differences?</p>

	<p>What are the implications for pain management?</p> <p>Written reflection: what is the opposite of pain?</p> <p>Assign biological mechanisms</p>
Week 5	<p>The Biology of Chronic Pain</p> <p>Summarize a recent review of neuroplastic mechanisms of chronic pain and present the key components of that review to the class.</p> <p>Discussion: How can PTs intervene in chronic non-cancer pain?</p>
Week 6	<p>Debate: Imaging for low back pain should be covered by OHIP in Ontario.</p> <p>Assessing Pain</p> <p>Rating pain: What's a 10?</p>
Week 7	<p>Assessing Pain Part 2</p> <p>Presentation of pain assessment tools</p> <p>Psychophysical testing demo of PPDT</p> <p>Open discussion: Is there any value to the statement 'pain is all in your head'?</p>
Week 8	<p>What causes chronic pain?</p> <p>What are the biological and how do we identify them? What are the psychological? What are the social/contextual?</p> <p>Collectively create a 'prognosis-based assessment' for acute pain</p>
Week 9	<p>The end of physiotherapy</p> <p>How do we recognize that we've reached the end of PT management for chronic pain?</p>

	<p>What outcomes are important? From what perspective?</p> <p>Is recovering from chronic pain possible?</p>
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Details of the course schedule and includes topics that were covered in the course.

2.2 Method

2.2.1 Design

This study followed an interpretivist research design. Interpretive phenomenology, also referred to as hermeneutic phenomenology, aims to uncover the lived experiences of a person or several people in relation to a particular phenomenon. For van Manen (2016) “lived experience means the phenomenology reflects on the prereflective or pre-predicative life of human existence as living through it”². In adopting an interpretivist phenomenological approach, we follow the observations of Wright-St Clair (2015), who states, “a phenomenon is something which is not self-evident; it is taken-for-granted or concealed in some way. It may appear or show itself, hinting at what the phenomenon is, but what it ‘is’ remains hidden. It is only because the thing itself is concealed when a phenomenological approach is needed”³. In the current study it is the phenomenon of ‘learning about pain, and pain management’ in the context of a non-traditional pain elective course that is the focus.

Phenomenology is also recognized as an important framework for inquiry in the human science professions. van Manen (2016) discusses how, “phenomenology has become a core component of developments in the professional human sciences”² including education, healthcare, and pedagogy. As the students in the elective course are all future healthcare practitioners amid their educational preparation, we reasoned that a phenomenological design would be fruitful. In considering how phenomenology links to professional practice, van Manen (2016) writes, “a phenomenology of practice does not aim for technicalities and instrumentalities – rather, it serves to foster and strengthen an embodied ontology, epistemology, and axiology of thoughtful and tactful action”². The primary researcher (ZL) engaged directly with students in the program to explore the

experience of participating in a non-traditional pain science course as an elective in their final year of the professional program before entering the field of physiotherapy.

2.2.2 Theoretical Framework

In adopting a constructivist-interpretivist paradigmatic position, we note that, “proponents of constructivism-interpretivism emphasize the goal of understanding the ‘lived experiences’”⁴ of phenomena. The use of hermeneutical phenomenology enables the exploration of participants’ experiences with further abstraction and interpretation based on researchers’ theoretical and personal knowledge⁵. To understand the meaning of what is being communicated, especially when intentions, values, moral issues, and feelings are involved, this may require critical reflection of assumptions, which is also known as Transformative Learning Theory⁶. A strong background and understanding of pedagogy and curriculum from the first author helped form interpretation while engaging with the dialogue from participants through a critical lens and critical reflection for this study in understanding that learning is a mutually transformative relationship between work and identity, which is primarily ontological while focusing on relationships such as ‘being’ and ‘becoming’⁷. As previously mentioned, part of the overall goal of the elective course is to transition from ‘doing’ physiotherapy to ‘becoming’ a physiotherapist. This transformation and reflective discourse are captured through interviews and reflective diaries. It is also important to mention that transformative learning has also been described as critical reflection of assumptions that may occur either in a group or autonomously and testing the validity of this may require critical-dialectical discourse⁸, which is demonstrated the analysis section of this research.

2.2.3 Participants

Participants were purposively recruited amongst those who had successfully completed the elective course and after the course grades were submitted. Eight students from the elective course volunteered to participate in the study including three males and five females participated with an average age of 26.7 years old. While not intentional, this is consistent with the population of the MPT program as the class size for 2019 was a total of 70 students with 63% identifying as female and 37% male. This aligns with the

phenomenological research methods as sample sizes are generally smaller in these types of studies to gather rich and rigorous data, and thick descriptions of lived experiences, from participants. A demographic form was collected prior to interviews to gather information about age and sex of participants.

2.2.4 Ethical Considerations

This study protocol was approved by the Research Ethics Board (REB) at Western University. Details of the study were explained to each participant before signing the consent form. Code numbers were assigned to each participant and corresponded with the audio recording as well as the transcript for confidentiality and identity protection. The primary researcher (ZL) did not have a direct relationship or any decision-making power over any of the participants.

2.2.5 Data Collection

All interviews were conducted in person after completion of the 2019 version of the course. The method of questioning involved reflecting, probing, and being engaged in the conversation. The length of the interviews ranged from 45-90 minutes and took place in a small private room at the university. Kellehear (1996) has argued that, “the interview is the creation of an unnatural social situation, introduced by a researcher, for the purpose of polite interrogation”⁹. The researcher attempted to create an inviting and safe space for participants, recognizing that some of the questions were personal such as asking about personal experiences with pain and had the potential to invoke an emotional response. A comfortable environment was created with pillows and blankets placed on the chairs. A focus on relationships and building trust was central. van Manen (2016) suggests: “the researcher should be personable in order to win the trust of the interviewee, especially if the phenomenon being studied touches on fragile matters. So, it is often important to develop a relationship of personal sharing, closeness, or friendliness before seriously opening up the topic of research”² Prior to all interviews, participants were informed that the goal was to have a conversation and learn about their lived experience rather than a formal interview. By setting this tone and stating the goal, the sessions followed van Manen’s suggestion that, “perhaps it is better to think of the interview as a conversation

than as ‘interview.’ Conversations require the right kind of atmosphere and tone”² All interviews were audio recorded. An interview guide was created with open-ended questions and additional probes were used to uncover the meaning of participants’ statements. See Appendix B for Interview Guide.

2.2.6 Data Analysis

Following van Manen’s recommendation for theme analysis, a detailed reading approach was taken. Every sentence was looked at to, “try to identify and capture thematic expressions, phrases, or narrative paragraphs that increasingly let the phenomenological meaning of the experience show or give itself in the text”² and significant sentences were highlighted. According to Varpio et al., (2017), “it is crucial that researchers specify who was involved in constructing themes, describe the processes used by the researcher to identify themes, and reflexively consider the points of view brought to bear on the research.”¹⁰. ZL as the Primary Researcher and DW as the Primary Investigator who is the course designer/instructor worked together to interpret the themes. The third author reviewed early iterations of the themes, and critically interrogated the coherence and resonance, posing questions and fostering dialogue and some further iterations. These themes were developed iteratively and by consensus. To ensure rigour, all participants’ accounts of their experiences were included as data, and the study’s credibility was complemented rational discourse through the theoretical framework from Transformational Learning Theory to arrive at a consensus. The reflective diaries from students and reflective notes made by ZL were also included reviewed as data reviewed to add richness. Literature has suggested that there is a need for reflective spaces to learn and make sense of work to critically reflect and make meaning¹¹. This was an active and iterative process that required scrutiny, reflection, and interrogation of the data, the researchers, the participants, and the context that they inhabit. Reflective notes were a strong component of the analysis process as axiology also concerns the role of the researcher’s values in the scientific process and in this case the lived-experiences and values cannot be removed from the research process⁴. Reflective notes were written immediately following each interview and throughout the analysis process.

2.3 Findings

Six themes regarding the lived experiences of learning about pain and pain management were identified: *Therapeutic Power of Words*; *Learning through Reflection*; *Lived Experience with Pain*; *Patient Partnership*; *Conceptualizations of Pain*; *Pain and Physiotherapy Practice*.

Theme 1. Therapeutic Power of Words

All eight participants indicated that their choice of words when communicating with future patients and building therapeutic rapport were important considerations. Many participants discussed a revelation that what they say as future physiotherapists can have a major impact on the therapeutic relationship with a patient.

“...we just learned that words matter.” - P2004

“It means more if you’re not using the right narrative and I’ve seen it [in clinical placements] ...how language can affect people, and so I think that [the] pain course kickstarted those thoughts in my brain...I just wish that was introduced earlier [in the MPT curriculum].” - P2005

Furthermore, the majority of participants expressed a concern about their own communication capabilities and discussed the importance of appropriate language to engage in dialogue with patients.

“Sometimes I do worry about making sure the language I use is right and I think that comes with practice and education...the way you say it can sometimes have an effect.” - P2007

“I think that would be helpful...sort of filling our toolbox... [to learn] the type of language when asking patients about those questions because it's always delicate, right?” - P2008

The power of words to oppress or uplift patients was discussed by a number of participants. One participant shared their excitement when going into clinical placements

to demonstrate their newfound knowledge from the course and see biopsychosocial models in practice. As one participant explained, *“I hadn’t thought about how important language was until these clinical placements because...you’re taught about the therapeutic [relationship with] clients and you’re taught about language affecting patients...what affect can it really have?”* - P2005

Several participants discussed how person’s living with chronic pain, words could disable or contribute to new narratives being created.

“One example I have...I saw disability being created in people through narrative... there was an admin assistant that worked at one of the clinics I was at, and she was getting treated...she looked at me and [said], ‘I didn’t know how many issues I had until I started working here...ignorance is bliss I guess.’ [I thought to myself], ‘yeah...don’t you realize what just happened?’ Look what you created in this person who probably didn’t have a lot of pain to begin with...I was so uncomfortable listening to those interactions because I didn’t believe in that at all.” - P2005

“I think words are powerful and subjectively you can get so much more out of someone...objective is...going to direct your treatment, but you need that subjective to cater your objective, you know. Not only for the differential diagnosis, but to see what’s really important for that client and I think being in that course [elective] and just having that first person language, that patient-centred kind of focus language of understanding [is important] ...it’s not necessarily [only the] pain experience...[it’s] their therapy experience, what do they hope to get out of it.” - P2004

Theme 2. Learning through Reflection

Reflection was also an integral part of the students’ accounts of learning in the course. Reflective diaries were used as both a pedagogical tool to facilitate transformative learning and as the primary focus of summative evaluation of the course. Many participants described the act and experience of writing in the diaries as a positive one.

“I think that self-reflection and thinking critically.... about yourself is pretty important...it can be a hard skill to develop, so I think it’s good to kind of practice it.”
- P2002

“I really liked writing the reflective diaries. I wasn’t a big reflective [person] before I came into this program.” - P2005

For some participants, writing in the reflective diaries was seen as a unique component of the course that was welcomed and several participants indicated they would like to see more reflection take place throughout the MPT curriculum. The reflective diaries were also discussed as an opportunity to learn about oneself, and to develop reflective practice capabilities for the future.

“I think I really appreciated them [reflective diaries] because not a lot of other courses really incorporated that method...it was just like a nice alternative to the traditional didactic approach. Yeah, I found it useful to analyze my own thoughts, which I don’t typically do or was very good at so, yeah, it was nice.” - P2006

Oral narratives were also identified within the diaries themselves. From one participant’s diary: *“To conclude this series of reflections, I’d just like to state that I have really enjoyed writing them. I think that self-reflection is an essential tool in professional and personal development and have thoroughly found this to be a useful assignment. Throughout the class discussions, it was difficult for me to participate. I have anxiety with speaking in front of small groups of people and find it difficult to think on the spot.”*
- P2005

Interestingly, some participants expressed discomfort, or indicated that they did not enjoy writing in the reflective diaries or worried that the quality of their reflections was poor. One student described the unexpected discomfort they felt after a class discussion about stigma: *“Today’s experience in class was unique for me. We spent the latter half of the class talking about the stigmatization of chronic pain patients. It left me in a bit of an identity crisis. I’ve never considered myself a chronic pain patient; however, after 3 knees surgeries I’m left with continued pain...Does that make me a ‘chronic pain*

patient'? I've realized that I feel uneasy about that term. Why is that? I'm not entirely sure. It might have to do with the idea of stigmatization." - P2008.

This same student went on to reflect: *"I felt really uneasy in the reflective diaries, and I explored this idea that I don't feel comfortable calling myself a chronic pain patient."*
- P2008

Other participants expressed uncertainty about the quality of their reflective writing:

"I initially didn't like it because I don't really like journaling or reflecting... I think the quality of the actual reflections was probably poor, but the whole exercise probably made me think more and I'm sure there were a lot of things that I couldn't necessarily put into words, or it just felt like I was rambling, so maybe I didn't include everything I was reflecting on, but I think it was a good exercise." - P2007

For the most part, the reflective diaries were viewed as a positive component of the course. Some participants drew the explicit distinction between reflective journaling and didactic lectures or traditional pedagogical approaches. As one participant stated: *"I think I found a ton of value in writing things down and I didn't realize how it just clarified things so much more."* - P2005

Several students described the process of reflection as allowing them to see how their thoughts changed over time: *"Being in a class so big... you don't have that chance to vocalize or... you think of something afterwards, you can write that in the diary as well, you can kind of decipher it...from free floating in your mind into...structured written sentences... I found myself actually looking back on some of my reflections and saying, 'hey, like, this actually makes a lot of sense, if I applied that in this practice,' I think it's...just reassuring...this course has changed my point of view."* - P2003

"It was a good exercise too and especially as the topics changed. I would kind of find myself writing both about something and then switch to something else and then when you look back, you can kind of see, not change per say, but you can just see a little bit of where like you're thinking kind of goes up and down depending on the topic." - P2007

Theme 3: Lived Experience with Pain

Many of the participants critically reflected on their own experiences and assumptions about pain, and how those were transformed while taking the course. There were many interpretations of the experience of pain, and some participants expressed the need for validation of their pain.

“[The course] kind of shifted my frame of focus of understanding that there’s two sides to an argument and...not necessarily one side is right, but you need to be open minded to different realities in a way, perspectives, I think, it made me very introspective about how I’ve grown up with pain, not necessarily directly myself but indirectly through family, friends and everything... I definitely adopted a lot of principles that we used in that class, the biopsychosocial kind of frame of mind or the validation, the acknowledgement...of people’s pain experience in my clinical narrative a little bit better.” - P2004

“At one point the discussion in class turned to the idea of patients wanting their pain validated (often through medical testing). I am that exact patient that is disappointed when my test results come back negative. I’ve had 2 MRIs since completing my knee surgeries to see if my pain could be explained, and both times, the doctor said everything looked good and there was no obvious reason for my pain that could be fixed through surgery. I think my frustration at this answer was more to do with the fact that there wasn’t a fix for my knee vs. not feeling validated.” - P2008

A number of participants shared stories recognizing how one’s history with pain shapes perception. One participant (P2003) who grew up with asthma and scoliosis shared how their baseline for pain was informed by recognition of the suffering of their ancestors. In their reflective diary they stated: *“I found myself introspecting into my relation to pain. I believe that if I was to place myself on a scale on how I react in a painful situation, I would fall closer to a side of resiliency. As to why, I believe that it may have to do with my upbringing and my immigrant heritage, where I heard stories of my grandparents fleeing from a brutal communist regime. Perhaps subconsciously, I have come to believe that every other painful experience is relative to theirs.” - P2003*

While there were several narratives shared on histories of pain whether it was chronic conditions or sports injuries, the emotional pain experienced was very apparent not only in the participants' accounts, but in their recognition of the emotional pain of others.

"I had a very emotionally painful year and I almost feel... reassured that... we do need to kind of experience the good with the bad to appreciate the good, I think that's [a] very... impactful kind of thing and it's certainly not something we think about." - P2001

"I think, I always appreciated that pain is subjective. That's one thing I think I always associated pain to just being physical. I didn't appreciate that psychosocial role into it. I know that beyond physical pain; however, there's heartbreak pain and that's a different...but I...never...coined in my head...[the] psychosocial, I guess the psychology side of things, but growing up as an athlete, pain was always physical."
- P2004

Theme 4. Patient Partnership

Participants consistently identified learning the value of the therapeutic alliance as an impactful learning outcome. In the words of one participant:

"I guess I never really acknowledged that there would be such a large communication component and...therapeutic alliance component and, I never really thought about that too much...I think I just value the connection component of physio much more now."
- P2006

Education as a means of empowering patients was also frequently emphasized, with participants recognizing: *"what the education is and what it can do for the patient to empower them."* - P2003

Many participants described how class discussions contribute to an appreciation of empathy as a fundamental value when communicating with patients.

From a participant's reflective diary: *"Another good point that arose in discussion today was that we need to make people feel that we understand that they are in pain, that it is*

real and to have empathy. I think that this is really important, especially when treating a patient in chronic pain. Sometimes all the patient needs are to have someone to listen to them and validate their feelings.” - P2005

“I feel like there’s something to be said about being really able to immerse yourself in someone’s experience, more of an empathy kind of thing. I was worried that I kind of wouldn’t have that because I guess, you know, I’ve always been in good health thankfully. So, I felt like some of the kind of tidbits of knowledge along the way [in the course] helped me to gain insight into that experience.” - P2001

“I came out of this class feeling a lot more grateful in respect to being a part of the patient’s healing journey... While I do still have some doubts about the effectiveness of physiotherapy treatment on certain conditions, I have come to understand that it’s ultimately about the patient.” - P2003

Some participants also reflected upon their prior lack of awareness about the complexity of pain for patients, and their eyes were opened to the importance of connecting with patients by empathy while listening to their narratives.

“Maybe I would’ve been more comfortable in my ignorance, you know, just been like, ‘ah, let’s just work on an exercise, you’re weak here and you’re tight here.’ So, I think it...made things more complex, but I also felt like I was able to empathize better with people and connect with people better.” - P2006

“Trying to have empathy for patients, and validating their pain as well, sometimes patients, just need someone to listen to too and they can’t really get that from another health care professional sometimes, a physician or something doesn’t have the time, right? So, I think that’s kind of important as well because that was a huge, that was a big topic [in the elective course] too, talking about validating pain.”- P2002

Theme 5. Conceptualizations of Pain

Many of the participants discussed their experiences of conceptualizing knowledge about pain in new ways as a result of class discussions and reflections. Each of the participants

talked about their knowledge of pain growing towards a more expansive idea of what pain is and how it can affect people. This included more of a priority being given to the biopsychosocial model, forcing a consideration of determinants of pain beyond the biological to including psychological and social aspects.

“I think there’s a lot more gray areas. Before I started, I thought it was very black and white, like you’re hurt, then you’re better.” - P2007

“But now I kind of feel like, if you’re not incorporating some aspect of the biopsychosocial model, you’re doing poor... you’re not just neutral anymore.” - P2005

In reframing the complexity of pain science, some participants explained the knowledge from the course helped to encourage a new perspective and many participants described their transformative understanding of the lived experience of pain.

“it’s just this whole structural...biomedical...focused narrative and...I think now what I appreciate more about that, being in this course, it’s not just all that...I don’t want an image to put words in someone’s mouth or words in someone’s mind of what their... realities [are] like.” - P2004

“I’ve always kind of appreciated the fact that pain is subjective and that, you know, we can’t really judge others because they’re the only ones living that out, but I think you know, the course kind of really, really enriched that idea and really kind of acted as a reminder that it’s [pain is] a very sensitive thing and as clinicians or as healthcare providers we do have to be you know, increasingly sensitive and respectful of that fact.” - P2001

Theme 6: Pain and Physiotherapy Practice

Several participants described their prior assumptions about physiotherapy as an exercise-based biomedical therapy, and a broadening in their views toward recognition of the communicative and relational dimensions of therapeutic practice.

“Now my view of physio is more so as like, a coach, a facilitator, you know. I don’t really value...hands on stuff that much to be honest. I think a lot of what we do and what we

should be doing is mostly educating, obviously reassuring, guiding people towards their goals, whether or not that's with exercise.” - P2006

“I got more connected and realized physiotherapist do rehab, they're the ones who are actually behind the scenes, the doctors are making the diagnosis, and then I'm doing the referrals, you know...you're the one who's doing the hands on.” - P2004

“Going beyond the body, I believe that physiotherapy can provide benefits to the mind” - P2003

Many of the participants spoke of new understandings about pain and what physiotherapists do. Some participants indicated that their understandings of the centrality of pain within physiotherapy practice were transformed after taking the elective course.

“I feel that course was very insightful. I think coming into this program...[becoming] a physiotherapist, you're always taught to think about pain as... something that the person suffers from, right? And the first class, what they did was they kind of tackled... pain is necessary in our lives and...just exploring different pains. It can come from one source...pain is kind of the body's... feedback and...drawn upon all the inputs that you have, it's actually an output... the body...demonstrates in order to achieve for you to be more aware of it. I think pain is necessary.” - P2003

“I didn't feel like physio was that special, and...I expected to know more of the biomedical stuff, but it just seemed too easy. ‘Oh, your knee hurts, do a knee exercise.’ So, I [thought], ‘woah, why can't anybody do this?’ But now, I see why, and I see the importance of physio, but it's hard to get other people to understand that. I also have people [such as parent saying], ‘my back hurts, can you give me a back exercise?’ Ugh, it's just so much harder than that, but I can't explain to [them] why because [they] probably won't buy in, you know?... So, yeah, it's kind of exciting...I feel like this group...maybe... this new wave hopefully comes in and kind of starts to rebrand what physio is.” - P2005

2.4 Discussion

The objective of this study was to explore MPT students' perception of learning about pain and pain management through participation in a pain elective course. Hunter et al. (2015) explain that according to the International Association for the Study of Pain (IASP) it has been well established that participation in a pain course can change learner knowledge about pain, regardless of the length or format of the course ²⁹. In this case, this elective was a 9-week course that included 27 discussion/seminar hours. The findings suggest that many participants conceptualized a new understanding of pain. From the findings, it seems that a taken-for-granted understanding of pain as a universal experience was challenged, forcing a reconceptualization of views of pain for many students. Student reflections highlighted increased appreciation for biopsychosocial dimensions rather than a sole focus on a biomedical approach. The current study supports the contention based on the idea that the growing prominence on the biopsychosocial model and collaborative decision-making in the management of persistent pain, it may be helpful to conduct a review of educational curricula to works towards better prepared clinicians for the possible communication challenges they may encounter in their practice ³⁰. The promise of reshaping educational curricula through a critical social science, and a biopsychosocial perspective, was underlined by the rich descriptions of students' reflections on learning. The findings point to the promise of such approaches to foster awareness of communication challenges, the power of words, the importance of dialogue with patients, and how language may help to establish a therapeutic alliance. Learning related to the importance of practitioner empathy in this area of practice was noted by many students. In a study on perceived acquisition, development, and delivery of empathy in physiotherapy encounters, empathy was considered an essential component in therapeutic relationships ³¹. In the findings, empathy with patients, was a capability many participants were working towards gaining experience in when communicating in clinical settings.

In using reflective practice as a way to learn, many participants described their experience of writing in reflective as fostering deeper learning and insights. Insights about assumptions, and transformation in perspectives. Some students also highlighted

their discomfort with writing reflections, or with some of the reflective material that arose in the process. One participant even described a class discussion on chronic pain led to a personal identity crisis given their own lived experience. This is consistent with literature on transformative learning theory that suggests that disorientation or discomfort can occur when taken-for-granted assumptions are challenged and new perspectives are being formed ³². Recent literature also states that health science professionals identify, categorize, and rate with empirical descriptors the nature and intensity of various forms of pain; however, in the actual moment of suddenly being struck by pain or the condition of suffering a chronic pain somehow seems to leave professionals beyond words ², which may help to explain how opening up new perspectives may lead to disorientation, or even a crisis of identity. As the written reflective diaries constituted a large component of the course, the data elicited was largely reflexive in nature. It has also been suggested that writing can encourage clinicians to reflect at a deeper level while allowing them to make sense and better understand more complex situations ³³, as demonstrated in the findings. The findings also revealed a transformation in what the participants understood of physiotherapists' role as providers of pain management. Participants shared their previous thoughts of physiotherapists' role in pain management as one centred largely around a pathomechanical understanding of impairment and dysfunction. The data revealed many examples of transformed perspectives toward a new understanding of pain and pain management oriented toward critical, social, and relational dimensions. These thoughtful remarks not only provided new imagery such as physiotherapists being the passenger in patients recovery process that may provide directions and guidance, but also demonstrated reflective practice in action as well as transformative learning.

2.5 Limitations

The participants in this study were 8 volunteers out of 40 students and were chosen from a convenience sample, which reduces the student sample representation. A future research study could include data from various Master of Physical Therapy programs. For those that volunteered as participants, it may be that they were more introspective and have a deeper investment in pain and pain management.

2.6 Conclusion

Pain management is increasingly recognized as an important competency in novice clinicians, and efforts in physiotherapy professional education programs to present this information through a more biopsychosocial lens are becoming more common. While some participants suggested that they felt they may have been happier remaining in a state of ignorance of about pain science, the overall enthusiasm and hope expressed by participants regarding their reconceptualized and transformed understandings of pain cannot be ignored. The elective course, *Understanding Pain in Rehabilitation*, fostered student reflection on pain as a complex experience that often requires a more person-centred approach, careful dialogue, and empathy with patients; it also challenged the students to think more critically, to rethink taken-for-granted assumptions, and to expand their views. The course appeared to offer participants a safe space to reflect and integrate their newly acquired knowledge while also utilizing the capability for reflective learning for future practice. Researchers and educators are encouraged to explore ways to integrate a more critical scholarship of pain into the physical therapy curriculum. Reflective writing is also encouraged as a pedagogical approach that fosters the integration of new conceptualizations and knowledge, and to support practitioners to make sense of experiences in and outside of practice.

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Chapter 3

3 Two puzzles, a tour guide, and a teacher: The first cohorts' lived experiences of participating in the MCISc Interprofessional Pain Management program at Western University

3.1 Introduction

In September 2019, the Master of Clinical Science program (MCISc) in Advanced Healthcare Practice at Western University in London, Ontario, Canada introduced a new, “Interprofessional Pain Management” (IPM) field. Practicing healthcare providers with a special interest in pain were invited to apply. The first two authors started co-developing this program in September 2017 with guidance from experts, designing it around a collaborative team integrated competencies framework. While there has been a lack of pain management education for all healthcare providers, a shift in educational philosophy, framework, and expectations, which has led to considerable innovation and challenges for healthcare professions educators is taking place ¹, which led to taking a competency-based curricula that focuses on the outcomes of learning and abilities rather than traditional time-based training.

There are five core competences for the program each with a set of entrustable professional activities (EPAs) that when completed provide evidence for adequate mastery. Details are presented in Table 1. Interprofessional education involving interactive, small group learning formats, and collaboration has been identified as a key factor for effective pain education ², and were included in the design of the program. Learners were also provided with numerous resources and access to content experts via video calls in various fields in relation to pain. As far as we know, this online and competency-based master's degree program with an interprofessional emphasis is the first of its kind in Canada.

Table 2: MCISc IPM Competencies and EPAs

Critical Reasoning & Creativity	Empathic Practice & Reasoning	Self-Awareness & Reflexivity	Interprofessional Collaboration	Pain Expertise
1.1 Efficiently and effectively searches appropriate sources to find relevant knowledge	2.1 Takes perspective and can subjectively experience another person's psychological state and intrinsic emotions	3.1 Explores and identifies critical incidents both personal and professional	4.1 Demonstrates partnership in an interprofessional team	5.1 Describe and interpret pain from a biopsychosocial lens
1.2 Efficiently and effectively summarize a peer-reviewed paper	2.2 Identify and understand a person's feelings and perspective	3.2 Describes and reflects on cultural and societal biases	4.2 Demonstrate teamwork and collaboration	5.2 Collects information to evaluate and interpret intervention pain
1.3 Evaluate new knowledge for trustworthiness and risk bias	2.3 Construct appropriate responses to convey understanding of another's perspective	3.3 Uses reflection to develop deeper understanding of previous critical incidents	4.3 Interpret and understand patient health through social determinants of health and social equity	5.3 Appraises, synthesizes, and summarizes biology of pain
1.4 Interpret the findings of research from a critical social science lens	2.4 Behaves in a non-judgmental, compassionate, tolerant, and empathic way	3.4 Moves beyond reflection and critical thinking to benign introspection	4.4 Advocates on behalf of patients	5.4 Appraises, synthesizes, and summarizes psychology of pain
1.5 Synthesize research evidence with clinical experience	2.5 Tracks changes in quality of therapeutic alliance	3.5 Sees self through the eyes of others	4.5 Establishes an effective working alliance with a patient	5.5 Appraises, synthesizes, and summarizes sociocultural aspects of pain
1.6 Creates new relevant, defensible, ethically, and				5.6 Conducts a comprehensive assessment of a

socially just knowledge				patient's pain experience
				5.7 Establishes a prognosis/theragnosis for patients in pain
				5.8 Synthesizes information from assessments to intervention plan
				5.9 Select a published model of pain to critically interpret

Table includes all MCISc Interprofessional Pain Management field competencies and Entrustable Professional Activities

Understanding the lived experience of the first cohort is important for the researchers to interpret participants' learning journeys and experiences ³. The findings can be used to improve and implement changes in the existing program, and to inform other health professions education programs interested in advancing the design of pain education programs. Inadequate education of healthcare practitioners is a major and persistent barrier to safe and effective pain management for patients, this includes an absence of competency-based and interprofessional curricula ⁴. This program focuses on improving clinical effectiveness in managing pain using learners' real-world experiences as a platform for learning, while taking a biopsychosocial approach. This approach compromises of the biomedical domain of organelles through cells, tissues, organs, and the nervous system to the phenomenological domain, which examines lived experiences of pain and pain management, to the psychosocial domain which consists of subjective and emotional dimensions, as well as consideration of social and family structures (psychosocial domain) ⁵. The purpose for this study is to inquire into the following research question: What are MCISc Interprofessional Pain Management students' lived experience of participating in pain management education?

3.2 Method

3.2.1 Design

This project followed an interpretivist research design. Interpretive phenomenology, also referred to as hermeneutic phenomenology, aims to uncover the lived experiences of a person or several people usually with a focus on a specific phenomenon. In this study the phenomenon was the experience of participating in an interprofessional pain management program. van Manen's approach to phenomenology of practice was used to inform the design of the study, including the construction of interview questions and the representation of findings as phenomenology that tries to show how our concepts, words, and theories may inevitably form and give structure to our experiences as we live them ⁶. In using an interpretivist phenomenological approach, we follow the idea that phenomenology prioritizes how the human being *experiences* the world, such as how the patient or learner experiences pain ⁶. Within this methodology, we inquired into participants' experiences of participation in the course to better understand each learner's perspective and story.

3.2.2 Theoretical Framework

Sharing stories have been described as fundamental to understanding and constructing meanings, knowledge, and identity ⁷. In following a phenomenological framework, we also adopt a constructivist-interpretivist paradigmatic position to emphasize the aim of understanding the lived experiences of participants within social and historical contexts ⁸. The phenomenon at hand is the experience of participating in an Interprofessional Pain Management master's-level program. The ultimate learning outcome for the IPM program is for learners to work towards becoming a competent person-centred pain care provider, which may be viewed as a narrative of the journey of participation in the program for the learners. The use of hermeneutical phenomenology enables the exploration of participants' experiences with further abstraction and interpretation based on researchers' theoretical and personal knowledge ³. To understand the meaning of what is being communicated, especially when intentions, values, moral issues, and feelings are involved, this may require critical reflection of assumptions, which is also known as

Transformative Learning Theory⁹. A strong background and understanding of pedagogy and curriculum from the first author helped form interpretation while engaging with the dialogue from participants through a critical lens and critical reflection for this study in understanding that learning is a mutually transformative relationship between work and identity. This transformation and reflective discourse are captured through the interviews. It is also important to mention that transformative learning has also been described as critical reflection of assumptions that may occur either in a group or autonomously and testing the validity of this may require critical-dialectical discourse¹⁰, which is demonstrated the analysis section of this research.

3.2.3 Participants

Participants were the first cohort of the IPM program recruited as a convenience sample. The learners were notified early that they would be invited to participate in a study on their lived experience of participating in the program. The first cohort was made up of four learners: one chiropractor, one naturopath, and two physiotherapists. All of them were practicing at the time of the program and at the time of the interviews. Each learner was compensated for their participation through a stipend to compensate for their time away from clinical responsibilities.

3.2.4 Ethical Considerations

This study protocol was approved by the Research Ethics Board (REB) at Western University (project ID: 113244). Details of the study were explained to each participant before signing the consent form. As this is a small cohort/sample size, learners were notified through the letter of information and consent that there was a potential that participants would be revealed inadvertently by the data that they contribute, but no identifiers would be published. Code numbers were assigned to each participant ranging from P001-P004 and corresponded with the audio recording as well as the transcript for confidentiality and identity protection. In the consent form, the participants were informed that the primary researcher (ZL) has been involved with design and implementation of the IPM MClSc program since its inception as part of her degree requirements as a PhD candidate. ZL held an administrative role and served as a

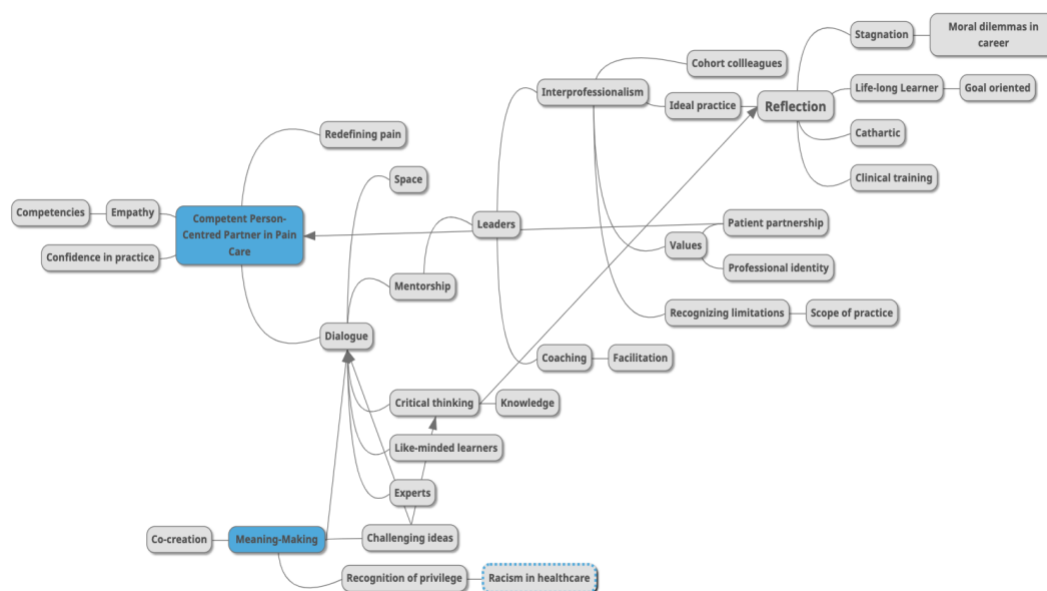
committee member to determine policies and procedures of the program. She did not engage in delivering content and had no power over student's progress in the IPM MCISc program.

3.2.5 Data Collection

A semi-structured interview guide was developed that aimed to elicit participants' stories about their experience participating in the pain management program. A number of drafts of the guide were developed through iterative dialogue amongst the research team. The interview guide was piloted with the second author. (See Appendix B for full interview guide). All interviews were conducted by first author via Zoom. The interviews occurred after completion of the program and after degrees were conferred. The method of question involved reflection, probing, and engagement in dialogue. The length of the interviews ranged from just less than 1 hour and 45 minutes to just over 2 hours.

3.2.6 Data Analysis

van Manen's (2016) selective reading approach was used for data analysis. In selective reading, the text is read several times and explored to identify what is being revealed about the phenomenon being described through the perspective of the researcher ⁶. The analysis also included creating a mind map using an online mind mapping generator, which was shared with the second and third authors. See Figure 3 for Mind Map, which was used to evolved over time, and was used to visually organize the findings into themes. According to van Manen (2016), phrases should be copied then saved as possible rhetorical 'gems' to support the researcher while writing the phenomenological text ⁶. The text that was considered central to descriptions of the lived experience of participating in the IPM program was highlighted by and organized into a spreadsheet, and then sorted into themes. The authors engaged in dialogue about the unfolding interpretations and considered if they could be interpreted otherwise. These themes were developed iteratively with the final structure constructed through consensus of all authors.

Figure 4: Mind Map

Mind map to organize data and topics of interest.

3.3 Findings

Five themes in regard to the lived experiences of participating in the first cohort of the MCISc IPM program were identified: *Reflection on Stagnation in Professional Disciplines*; *Meaning-making through Dialogue with Like-Minded Learners*; *Challenging Ideas and Critical Thinking at Play*; *The Spirit of Interprofessional Care Includes Patient Partnership*; and *Becoming a Competent Person-Centred Partner in Pain Care*.

Theme 1. Reflection on Stagnation in Professional Disciplines

In asking participants why they applied to the Advanced Healthcare Practice MCISc IPM program, some learners expressed a feeling of stagnation in their current clinical role and spoke of looking for a way to challenge themselves.

“Well, I thought as a sole practitioner, I felt like I was a little bit on an island in terms of keeping up-to-date and there’s only so much that I can do for continuing education, and I felt like that was getting a little bit stale.” – P003

“I’m extremely goal-oriented...this might be a fault to some extent. I always wanted something else. I’m always like, ‘OK, what’s next? How can I challenge myself?’ I never want to be stagnate in my career. So, this kind of came to be an option and...the pieces aligned and then it worked.” – P004

Participants shared a desire to continue their education in pain management. The majority of them characterized themselves as ‘life-long learners’ and valued gaining new knowledge to better themselves as a practitioner.

“I was just getting very sort of frustrated with continuing education that the state of it in [clinical profession]. Anyway, I was really big into the soft tissue side of things...and I found that getting very stale and repetitive. You know, it’s almost like they weren’t keeping up with the current loop of research that I was reading on the internet, and I found that to be a little frustrating because if I’m gonna spend all this money, I want to do it just for something that is worthwhile and current.” – P003

“It’s important to me to become the best clinician I can. I thought this was a good opportunity to pursue becoming...an expert in pain.” – P001

“So, I think it was just sort of the hope for the growth and expanding on sort of my skills as a healthcare provider to sort of be continuing on that journey and grow there. I think one of my past sort of supervisors used to say that ‘as soon as you feel like you have nothing left to learn, it’s time to get out of the profession.’ And so, I think... I really just like learning and really enjoy learning, but I think it’s also, as a healthcare provider, we have this responsibility to keep growing and to not stop. So, I think part of my hope was just that I could use sort of where I’m coming from, but then also, the resource in this program to just sort of keep expanding on that and become a better healthcare provider for people that experience pain.” – P002

Expressions of participants' hopes and values as a healthcare provider were woven through the interview conversations.

Theme 2: Meaning-Making through Dialogue with Like-Minded Learners

The participants' peers in their cohort, mentors, and the experts in various fields that the learners connected with throughout the program were frequently described as like-minded individuals and dialogue with these individuals was described as intellectually stimulating, and as informing rewarding learning opportunities.

"I enjoyed the program because of my conversations with the people in it." – P004

"I found it to be very stimulating intellectually and the other learners...and with anyone that we really talked to was very friendly and open with communication so, I found it to be something that I looked forward to. You know, it was a lot of work, but I enjoyed doing it and I would definitely do it again and I'd recommend it to anybody." – P003

"We were able to have weekly or almost weekly meetings with the group. And so, I think the process of having that time for discussion to really break down the material, speak with different experts in their fields and learn from them, I think that was another key area that I think there's a few other opportunities to really touch base with so many different experts on a weekly basis...that's really challenging on your own. I don't think we would have gotten that opportunity outside of this program to any significant extent, especially in such a small group where we could have those individual conversations with the expert. So, I think those pieces really stood out for me as it's quite... [a] rewarding experience in being able to kind of really build working relationships with these other healthcare providers that you're learning with and from at the same time."
– P002

"It is nice to just be...among other similar minded clinicians." – P001

Learning from and with others was highly valued and seemed to be a ways to make sense of the newly acquired knowledge from the program. Participants explained the growth

and connection that took place, and how meaning was made through dialogue with others.

“I think some of the most positive things that I took...it’s definitely in terms of improving my own confidence with my own abilities. It’s really good to go through a rigorous program to kind of prove that...I do deserve to have a seat at the table, and I can have these meaningful conversations with other experts, so I think it’s been huge for my confidence as well.” – P001

“I think we have a tendency to focus on some of the harder or difficult moments because they really make an impact on us, but I think those are the ones that almost forced change. And so, I think without some of those or part of the reason I wanted to do this program was the extra chance to be sort of mentored and...the competencies did [that] through that growth.” – P002

“I feel like the whole program itself was a bit of an ah-ha moment. But I think... a few of them for me were really sort of some of the papers that we kind of connected with themes throughout and how we sort of framework these experiences to sort of make sure that we can intervene in a way that makes sense for that person. So, I think some of the papers around the radar plot and sort of how do we integrate those within patient care? I think a lot of us do it to some extent, sort of intuitively, but then having that visual was sort of a bit of an ah-ha moment for me. It’s an easy way then to kind of explain to someone else of, ‘this is why we intervened here’ because this is the pain drivers.” – P002

Theme 3. Challenging Ideas and Critical Thinking at Play

Many participants described challenging their assumptions and deepening their critical thinking and how their thought patterns had transformed through participation in the post-professional MCIsc IPM program.

“I didn’t feel like I was back in [clinical training] where you just kind of accept everything. I’m listening, but I’m challenging everything that they’re kind of suggesting and not just taking it as it is...I’m able to listen to some really great thinkers and I’m also able to still kind of challenge them.” – P001

“And sort of really almost challenging some of the beliefs that I had had about our interest, like the interventions that [clinical profession] use. And so, I think it was really in that sense, it was sort of stepping outside of my comfort zone because I have done some of that work in the past, but I don’t think to the same depth that I did it within this program in route of reassessing... It was really sort of that level of discomfort of grappling with...certain things and really sort of challenging my own comfort and beliefs about what we’re doing.” – P002

In doing this critical thinking, many participants appeared to challenge their ideas and beliefs, while also thinking outside of the box.

“I just assumed that a good recovery is you either get back to who you were or better and those are the only two options that were satisfactory, acceptable for me, but I think being able to really engage in that conversation and have that challenge, and also open up the options for people that there’s other ways that people can have good recoveries and I don’t need to tie my own...expectations of myself, and that’s not a reflection of myself...that was the first and biggest ah-ha moment or kind of paradigm shifting moment where I guess my perspective as a clinician changed.” – P001

“I like to question things and you know really make sure that what’s being said is valid.” – P004

“I remember there was a few [activities] that were definitely more intellectually hard to grasp [including] the Seven Step framework to a research paper and then also to the pain model. I remember those took quite a bit of time because I wasn’t sure what the expectations were so...I had to really think outside of the box and make sure I was looking at the big picture.” – P003

Participants described learning activities and tools, such as portfolios, and how they provided evidence of transformation in thinking or understanding. Throughout this apparent transformation, participants described feeling empowered and accomplished.

“[Portfolio] almost sort of reinforced what you’ve learned in one solid space, and so, having that opportunity to compile it all together was, I think, really quite powerful as a learner and quite a big [accomplishment] at the end of it.” – P002

“I found most of them [learning activities] to be really meaningful practices. So, I appreciated that, and I think it was nice to be able to create something...I guess there are some thoughts there that felt like I’m not doing this for myself anymore, whereas some of them felt deeply personal, that was such a wonderful thought experiment for me and the act of me going through it really was helpful for my own growth compared to some that felt like I’m just trying to prove to some external evaluator that I’m OK at something.” – P001

“I’m very proud of what I did. You know, I put a lot of work into it [portfolio]...I’d like to go back and read it, and I’m more than happy to let anyone have a look at it, but I definitely, towards the end of it, is when it really started to sink in that a lot of work went into that, so I felt really good about everything I had in there. You know some exercises were better than others, but everything in there I definitely feel good about.” – P003

Theme 4. The Spirit of Interprofessional Care Includes Patient Partnership

The recognition of interprofessional care through learning with, and about each other, was demonstrated throughout the interviews. Participants recognized their own limitations within their practice contexts and challenged their current structures of care by reflecting on what their ideal practice would entail.

“You don’t want the patient to feel like they’re in the middle of everyone and everyone’s sort of on their own little island doing their own thing. You know, even now, being in a solo practice, I know if I had a difficult patient, I could 100% trust that I could write anyone in our group [fellow cohort members] to get their opinion and I would value it and see what they had to say. And maybe it would make me think of something that I wasn’t doing or maybe that they could help them, or they knew somebody that could help this patient. So, I think that’s incredibly valuable.” – P003

“How we approach things and then just even so much of how we can learn from each other and then how we can sort of synthesize all of that information that we’ve learned together to really work better together, and I think that’s one of the key pieces that I feel like I’ve learned a lot as well. Now, we have sort of the shared language of how we work together effectively. What does that structure look like and how can we best serve patients within that sort of interprofessional collaboration framework?” – P002

“This was a consistent thing that came out that might come up with others as well, possibly, but something we had kind of spoken about is, most of us, we don’t work in super interdisciplinary teams...we’re very siloed and so our interaction with other professionals is so limited right now with where I am. I could say I’ve maybe been more aware of when we’ve kind of reached the limits of my abilities and we could be quicker to reach out to other people.” – P001

“My ideal practice would certainly involve some interprofessional collaboration.”
– P003

In interprofessional healthcare, person-centred approach is a way to demonstrate partnership and the therapeutic alliance with patients and caregivers. Participants discussed recognizing their own limitations and boundaries, as an important component of the learning process. Participants also shared their processes of advocating for patients; advocacy was identified as a value by the majority of participants.

“I think it’s certainly a process that I still feel like will continue for myself just to sort of continue to grow and learn about as well. But I definitely think I feel like I do have those better understandings of my own boundaries and how I can even advocate for someone with about healthcare provider as well, and sort of merging that together...I mean you could come up with the perfect treatment plan or management strategies for someone, but if it doesn’t actually make sense for them and it’s not something that’s in line with their values, it’s pretty much useless...I think at the end of the days it’s always taking that patient or person first approach with them.” – P002

“I think the things that I really value is, huh, this might be outdated, but I think we really

have a duty to do no harm and that really is a really broad thing that extends beyond just what we'd like to do with people. So, I think really making sure we are...trying to help people in a way that is most impactful for them both now and in the future. It's really important. So, part of that means being mindful of your language, how you frame things, how you're empowering people, and how you're helping support the development of their own self-efficacy.” – P001

“I still think I have my interpersonal skills [that] I think are pretty good for the most part with most patients, so I can build, I would say, fairly consistent therapeutic alliances with people, which builds trust.” – P004

Participants shared narratives about how they reassessed values or reflected on them more deeply through participating in the IPM program. Some spoke about how this kind of reflection and reassessment of values contributed to shifts in their identity, or how they see themselves as a person or practitioner.

“Well, how I view myself, I find that I apply a lot of the same techniques and active listening. I can use that in my everyday life as well. So, again, I think I'm pretty easy-going and it certainly helped in interacting with people I feel overall. I can probably connect with people a little bit better and I'm comfortable doing that because we've had those experiences in those conversations. There was one about oppression and privilege, concepts that I hadn't heard about, that I hadn't really given too much actual thought to and then once we had those conversations, it certainly made me think about how I come across and putting myself in other people's shoes. So, I think it's helped shape my identity that way that I'm hopefully a better person because of that.” – P003

“I think my professional identity is really based in just sort of supporting people where they're at and supporting their ability to have...access... to a management strategy that makes sense within the context of their values and belief systems...So, I really just kind of see it coming down to where I can support people within their value system and based on what sort of pain drivers are going on alongside these other healthcare providers as well and sort of always working together with that person at the centre of their care.” – P002

“Crazy ambitious goal, I do want to contribute to systemic change of how people with pain are cared for and I want healthcare to be more...evidence-based, more transparent...have patient and practitioner on an equal level...I much prefer to coach on the same level with people. So, I would love to see people with pain being more empowered and getting good care.” – P001

Theme 5. Becoming a Competent Person-Centred Partner in Pain Care

The importance of showing up and being present in the journey toward becoming a competent person-centred partner in pain care was shared by the participants. Some participants described their comfort level with pain management prior to starting the program and how the competencies in the program transformed their knowledge.

“I think our competencies were a pretty good place to start, that those are things that people should embody, but I think you do need to be knowledgeable, there is a lot you need to do to be an expert in helping people with pain, and that’s hard to help people if you don’t even know the game that you’re playing.” – P001

“That’s the neat thing about competencies is that you can kind of come in at your own level of comfort and then sort of grow from there or demonstrate competency within that framework. So, I think that I had sort of like a mixed comfort with some of them. I don’t think I was a pain expert to any degree. I think that one is one that you sort of, as the field continues to grow or sort of expand and change, I think that is one that kind of keeps developing over time...some of the ones around empathic care or self-awareness and reflexivity, I think I came in with a bit of comfort around them already. Just sort of by way of my profession and training and sort of how we’ve sort of gone about that. Then pain research and interprofessional collaboration, a bit of experience there, but just sort of expanding on that throughout the program I think and kind of continuing to develop it.” – P002

The knowledge gained from the program was described in detail throughout interviews, with all participants describing a change in how they practice.

“Initially, I was a little unsure of exactly what it entailed, but you know shortly after we got started, I realized it would be an awesome addition to my clinical practice and I found myself applying what we were learning almost immediately, which was pretty amazing to do be able to do that. So, definitely it’s impacted the way that I practice.”

– P003

“I would say I definitely feel like I’ve shifted and changed and grown as a healthcare provider in the field of pain management. I think that has certainly shifted, not only sort of my professional life, but I think it’s also sort of spilled over into my personal life as well. I think it’s sort of inevitable in a lot of ways of just when you’re focusing on certain areas...you know how I’ve gotten here and sort of what my biases are and sort of checking that I think it’s hard to capture in one or two sentences sort of how it’s impacted me, but I think it’s certainly made me a stronger healthcare provider, but also more aware in my personal life as well.” – P002

“I think this program...to be honest...maybe [was an] expensive lesson, but it kind of reaffirmed for me that no matter what you read and what you’ve learned and what kind of lens [which] you view pain, if you can’t connect with people, and if you just feel like you’re not able to amend to the blue collar worker or the CEO white collar person and [be] kind of a shapeshifter on a daily basis, you’re going to struggle regardless of what you know.” – P004

“May I say, I think I’ve become even more accepting of the people I work with, the uncertainty of it all, the complexity of it all, the things I do and do not have control over. I think it’s maybe the past year has just accentuated some of the things that I came in with...I have some values that I abide by, and I’ve double downed on a lot of those, so it’s made me feel even more sure about that actually and even more thoughtful with patients and more deliberate with patients about how we go about things.” – P001

Finally, in asking the question: Can you provide a metaphor for yourself as a pain care provider? Each learner described in detail a metaphor that represented themselves and their role. Two of the metaphors focused on guides or teacher, whereas two focused on metaphors of a figuring out or putting together. Interestingly the metaphors all focused in

one way or another on the collaborative and relational dimensions of pain management, and of figuring out the path together with the patient.

“The role that is hard to play for people is more as a guide. They’re there to keep people safe and try and lead them in a way that they want to and that maybe they can’t always see for themselves first, so I might have to light the way or lead them a little bit and just walking with them. Never carrying them.” – P001

*“It’s almost a puzzle piece to some extent too. You’re a part of a management plan or you are part of that kind of pain management piece, but I don’t see myself as being the entire piece of the puzzle, and I think it’s sort of working alongside those other people and sort of fitting together what it means within the context of that person’s day-to-day life and sort of how we can support them as best as possible. A puzzle piece photo of a body.”
– P002*

*“I guess I look at myself as a teacher because many times I’d say the vast majority of times people haven’t been told what’s going on in any meaningful way...And they haven’t been told what the diagnosis is, what it means, what the structures are involved.”
– P003*

“I’m thinking is like in terms of my role in treating pain. It’s like a puzzle. For me, I want so desperately want the pieces to fit, so it makes a whole picture of what the puzzle is, but the issue is in terms of like this puzzle is sometimes you don’t have the box to reference the photo to.” – P004

3.4 Discussion

The objective of this study was to explore and understand the lived experience of the first cohort from the MCISc Interprofessional Pain Management of participating in a pain management education program. The study findings highlight the journey of the students’ learning from the reasoning for entering the program; the experience of meaning-making with like-minded colleagues; challenging former understandings of pain management and critical thinking from their previous clinical training; valuing the spirit of interprofessional care including critical thinking, reflection, and creativity while

exploring their shift in patient partnerships; and finally working towards becoming a competent person-centred pain care providers.

3.4.1 Life-long Learning

Learners expressed the desire to challenge themselves and the value of life-long learning. According to Tryssenaar & Perkins (2001), continuing competence is a lifelong commitment that all professionals must make ¹¹. The emphasis in many health curricula of problem solving and lifelong learning are also mirrored in essential competency profiles for license practitioners, as evidence that even at the pre-professional training level the values of continued reflection, challenging assumptions, and continuing professional development are established ¹¹. In the findings, the majority of participants hinted at, or clearly stated their recognition of the need for continuing education and the value placed on lifelong learning. Reflective practice is recognized as a component of adult learning, and that reflective practice is central lifelong learning as well as professional development in all professions ¹². Participants expressed feeling stale and frustrated with their current offerings from their clinical professions for continuing education. According to Trede (2012), “if the aim is to educate students to become critical, considerate, global citizens and lifelong learners then this should be addressed in all spaces of learning” ¹³. As critical thinking and reasoning is one of the five major competencies in the IPM program, learners who participate and complete this program are encouraged to continue to challenge their current understandings of pain management and themselves. The findings also demonstrate that meaning making with like-minded learners to critically challenge theories, ideas, and practices in a space where learners felt comfortable doing so seemed to be a supportive in further developing capabilities for critical reflection and thinking.

3.4.2 Dialogue

In the findings, processes of dialogue featured prominently in participants meaning making. Canadian philosopher, Charles Taylor (1992), claims that people do not acquire the languages needed for self-definition on their own; rather they are introduced to them through exchanges with others who matter to them ¹⁴. Taylor also suggests that the

genesis of the human mind is not ‘monological,’ not something each person accomplishes on their own, but dialogical ¹⁵. Participants described how the dialogue with like-minded individuals in stimulating conversations felt important to them. Learners discussed how they made sense of experience and learned through dialogue and reflection with like-minded individuals. Interestingly in relation to the pain field itself van Manen (2016) states, “pain as suffering carries mostly negative connotations in today’s world,” yet “pain forces us to reflect and to give it a place and meaning in our lives” ⁶.

In, “*Meaning of Pain*,” Buytendijk (1957) acknowledges the complexity of pain and the human body while recognizing pain is not only physical ¹⁶. This program adopted a biopsychosocial approach to pain rather than one single perspective of pain. Buytendijk contends that the human body is a web of meanings each vitally bound to the other and it is not how clinicians react to the body, but rather how the clinician reacts bodily to the meaning of the pain that is important ¹⁶. The thought-provoking conversations and reflective assignments appeared to encourage participants to challenge themselves and others on ideas, practices, and deeper reflection.

3.4.3 Ideal Practice

Another capability that requires practice and was found in the findings to be a component of ideal practice is interprofessional collaboration. While all learners emphasized the need for more interprofessional interactions, some also stressed that the program offered access to a wide variety of experts, and the opportunity for interprofessional collaborations and dialogue. Some participants highlighted the need for mentorship, and the lack of mentorship through their careers. This may be due to the statement that, the progress in interprofessional pain education at the advanced ‘trainee’ stage of learning within the clinical settings has been less than ideal ², which may be an area to further explore at a later date. In expressing their ideal practice as well as the importance of interprofessional collaboration, the participants made visible their values and biases. Closely related to values is the construction of professional identity. Depoy & Cook Merrill (1988) argue that professional values can be operationalized by being made conscious through articulation, writing, and practice ¹⁷. Taking values into account,

professional identity has been defined as the constellation of attributes, beliefs, and values people use to define themselves in specialized, skill-and-education-based occupations or vocations ¹⁸.

Given that phenomenology is largely reflective and the MCIsc IPM program strongly values reflection while also requiring learners to demonstrate their mastery in the competency of self-awareness and reflection, it is important to acknowledge these parallels. Clinical educators have been suggested to challenge themselves with practical concerns regarding the use of reflection and that the goal of educators is to foster dialogue, to be critical through the use of reflective questions, and to facilitate professional practice capabilities ¹⁹. Reflective capabilities have been recommended to enhance resilience, healthy professional identity formation, and relationship-centered education ²⁰. This includes the ability to constructively process emotions and while appreciating multiple perspectives as a basis for empathy. This may also be applied to post-professional learners as reflection is a skill that requires practice.

3.5 Limitations

This study included 4 learners from a convenience sample, which may reduce the student sample representation. Future research may include exploring the lived experience of participation in the IPM program with a larger sample size across several cohorts.

3.6 Conclusion

Pain management has been increasingly recognized as an important component of clinical education. To our knowledge, interprofessional pain management has not been rigorously explored especially in a competency-based framework. So far, findings from the first cohort indicate that the learners were challenged in thinking critically, finding ways for meaning-making to build confidence to apply to clinical practice, reflecting deeply on personal biases and working to practice reflection-in-action. Many participants also described interprofessional collaboration as a value and shared examples of application of the knowledge gained from the program to current clinical practice. This program offers a unique approach to learning while creating an online platform to work, collaborate, and

challenge like-minded experts in the field of pain. In doing this research, we hope that more practitioners will work towards the goal of becoming a competent person-centred care pain care provider as the participants shared that it is an active process, much like allyship. Ally has become a verb and in being an ally, the learners of this program expressed a commitment to values of life-long learning and advocacy, hopefully they will continue to challenge their colleagues, their professions, and the field of pain management itself to think more holistically about pain management.

3.7 References

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Chapter 4

4 “The World Upside Down”: Clinical Encounters with the First Cohort of a New Pain-Focused Post-Professional Clinical Master’s Degree Program in the COVID Era

4.1 Objective

It has become increasingly recognized that current pain education for healthcare providers is inadequate¹. This is evidenced by the current public health crisis such as, the epidemic for chronic pain and the ‘opioid crisis’². In September 2019, the Master of Clinical Science Program (MClSc) in Advanced Healthcare Practice at Western University (London, Ontario, Canada) introduced a new, “Interprofessional Pain Management” (IPM) field. The program is open to practicing healthcare providers with a special interest in pain. As an online and competency-based program, learners have full access to numerous resources, academic and clinical mentorship, and content experts in various fields all connected via video calls. The program is built on a collaborative team integrated competencies framework through group meetings and their own individualized pace guided and facilitated by their mentors as they learn with as well as from personal and professional views of other learners. The program has been designed such that most learners can maintain 80% of a normal clinical workload while acquiring adequate evidence of competence to complete the program in 12 months. This is facilitated by an ethos of ‘the clinic is the classroom,’ allowing much of the evidence of actual competence to be accrued by capturing aspects of the learners’ routine daily practice completed by the end of the 1-year course of study.

There are five core competencies for the program each with a set of entrustable professional activities (EPAs) that when considered together indicated evidence of adequate master (see Figure 2).

¹ This paper has been published in *Pain Medicine*. Leyland, Z.A., & Walton, D.M. (2021). “The World Upside Down”: Clinical Encounters with the First Cohort of a New Pain-Focused Post-Professional Clinical Master’s Degree Program in the COVID Era. *Pain Medicine*. Published online first. <https://doi.org/10.1093/pm/pnab160>

The program also includes several required milestones including a clinical mentorship. Achieving the clinical mentorship milestone required includes engagement with approved clinical mentors; submission of an engagement log at the end of each term demonstrating the hours completed and the nature of the mentorship; and a minimum of 5 hours/term (15 hours total) of direct interaction between student and clinical mentor. Mentored clinical practice demonstrates educational standards by using a framework of clinical reasoning and integrating new knowledge and skills ³. Effective mentoring has been defined as an important component of academic success ⁴. The critical clinical interactions are required to be captured throughout the student's ePortfolio as reflective practice.

In the program's first year on offer, the COVID-19 pandemic forced a rapid shift in the student experience. It has been argued that COVID-19 is reviving the need to explore online teaching and learning opportunities as they are playing a crucial role during this pandemic ⁵. This program is completely online, which helped in the flexibility for learners, but problems still took place. The main objective of this commentary is to demonstrate how learners of the first cohort of the IPM field experienced the phenomenon of a student change to the required clinical mentor exchange during COVID-19. Two research questions were explored: (1) what was the experience with clinical mentoring during COVID-19 while enrolled in the Interprofessional Pain Management field? (2) what was the experience as a practicing clinician in a clinical role while enrolled in the Interprofessional Pain Management program during a global pandemic? Four themes emerged which are explored more deeply in the findings section.

4.2 Methods

After receiving ethics approval from Western University's Research Ethics Board, a study took place during October – November 2020 to explore the lived experiences of the first cohort of the learners in the new IPM program. There were four learners in total in the first cohort: one naturopathic doctor, two physiotherapists, and one chiropractor. Each participant was given a code (P001-P004) to protect their identity. In conducting

interviews via the Zoom platform, the primary researcher and lead author (ZL) followed a semi-structured interview guide that does not follow a formalized list of questions, which creates a more conversational interaction ⁵ with each participant on their experience of completing the program during the COVID-19. It is important to state the positionality of ZL as she has been involved with the IPM program since its inception. Creating and implementing is part of her degree requirements as a PhD candidate. ZL held an administrative role and serves as a committee member to determine policies but has not engaged in delivering content and has no power over progression of the first cohort of the program.

This study followed an interpretivist research design also described as a hermeneutic method meaning that reflecting on experience must aim for discursive language and sensitive interpretation ⁶. ZL engaged deeply with the lived experience of the learners and worked to identify rich descriptions characterized by qualities of vividness, accuracy, and elegance. In addition, the participants were asked within the informed consent to provide ZL access to the ePortfolios and all four agreed adding richness and detail to the study. The interviews were transcribed verbatim prior to analysis.

4.3 Analysis

The analysis followed van Manen's selective reading approach which included reviewing the transcripts, ePortfolios, and reflective notes which took place immediately after each interview. All COVID-19 and/or pandemic text was highlights and used as data. In doing this, the question remains, "What statement(s) or phrase(s) seem particularly essential or revealing about the phenomenon or experience being described?" ⁶ Thematic expressions were then formed by reviewing all data and categorizing it while working towards answering the research questions that relate to the primary objective of how learners experienced the sudden change to the curriculum during COVID-19.

4.4 Findings

All four learners who formed the first IPM cohort participated in the study through hermeneutic analysis, four themes became apparent to the researchers that captured the

lived experiences of the learners: *importance of mentorship, body language, isolation, and adaptation & acceptance*. Each are described briefly below with verbatim quotes from participants (italicized) to optimize transparency and trustworthiness

Theme 1: Importance of Mentorship

Participants emphasized the meaningfulness of the clinical mentorship. As one participant stated:

“When I first made the decision to apply to this program, one of the main aspects that attracted me was the opportunity to mentor under an actively practicing healthcare professional from another discipline who was experienced in pain management” (P003). P003 also described their mentorship experience during the pandemic. *“(Clinical mentor) adapted, pulled some strings, and reached out to me to see if I wouldn’t mind continuing the mentorship through Telehealth. After weeks in isolation, I was elated to get back to...clinical work”* (P003). Another participant insisted, *“something that I haven’t had the opportunity to really like take advantage of in my career like actually having a good mentor, so both that with [academic mentor] and also with...clinical mentor”* (P001). When asked what it was like having a clinical mentor, one participant stated, *“I think it was probably...one of the key pieces in the program because it was sort of this chance for someone to [see] as an equal, but just sort of check in with where you’re at...and talk through some of those things both from a clinical standpoint and I had the opportunity to be mentored by someone within my profession”* (P001). These statements appeared to highlight the importance of mentorship, the benefits of learning from experts either in the same field or in different ones.

Theme 2: Body Language

Participants acknowledge the shift in clinical dynamics imposed by the need for physical distancing or donning of face coverings as personal protective equipment. One participant described their clinical mentorship experiences as an opportunity to see both the benefits and drawbacks of using a new platform: *“The bonus of observing telemedicine demonstrated additional emphasis on communication as [clinical mentor] couldn’t read*

the patient's body language" (P002). When describing moving back to in-person treatment as local distancing measures eased, one participant, indicated in a written reflection: *"wearing a mask all day was challenging for reasons beyond just comfort. I didn't realize just how much I gauged my patients' feelings by looking at their mouths. I found myself having to ask how they were doing much more often because I had a harder time sending it from their facial expressions"* (P004). Another participant described their profession as being critically hands-on, *"human interaction is one aspect...which drew me to the profession. I love the ability to sit down, really try to get to know somebody, and make them feel comfortable enough to relax...now, instead of being greeted by a welcoming smile and handshake, the first thing that any patient is going to see is an empty waiting room full of hygiene and...me wearing a surgical mask sitting behind a layer of plexiglass"* (P003). While another stated that: *"reading patients over virtual care is challenging. Every few patients, the lag in technology means I am missing body language or facial expression. I'm realizing that much of my ability to 'read a room' and navigate a visit comes from body language"* (P002). Collectively, this theme was interpreted as describing the lived experience of forced reflection about what could be considered praxis in clinic, that participants become more aware of what had become an intuitive use of body language and facial expressions in gauging their patients' well-being. This led some to reflect upon the relative value of alternative communication strategies when engaging with others about their health.

Theme 3: Isolation

One participant's clinical mentoring experience significantly changed as they went from in-person clinical observership with a physical medicine rehabilitation physician to attending a single interfaculty pain session between occupational therapy and physical therapy on communication skills to promote physical activity. This participant indicated, *"it was interesting, but it wasn't the same and you know I think everyone was going through a lot of stuff for COVID...I imagine[d] being part of the community therapy [on campus]"* (P004). Through the IPM program, an academic mentor arranges bi-weekly meetings with each student to discuss challenges including this disruption in mastering a competency and worked to support them by critically thinking of alternative options due

to COVID-19. Emerging evidence, indicates partnering with multiple mentors significantly benefits mentees ⁴. Another participant described during their interview spending a lot of time worrying about their patients' well-being while maintaining their own self-care. They questioned, *"Is it getting potentially...worse without their access to all of their healthcare providers? It wasn't just me it was everybody that they see to some extent as well...being worried about people I already know are isolated right now and limited in sort of what they can access. Having more restrictions and... more limitations in their social circles. It was hard"* (P002). Throughout the IPM program, there were special topic sessions on living with chronic pain and mental health, which can be applied to this particular case. *"This lockdown has presented us all with a unique opportunity to reflect and be thankful for all the good in our lives and make time to connect"* (P003). However, all participants expressed fear and anxiety about the unknown for their practices. Knowledge on the detriments of social isolation for all has been more widespread at this point in the pandemic, but is still important to acknowledge that social isolation measures have had a profound impact on the psychological and mental well-being of individuals across society ⁷. With reflexivity and interprofessional collaboration as major components of the program, the restrictions were expressed via reflective journals and within the IPM community.

Theme 4: Adaption and Acceptance

It has been suggested that managing expectations of both patients and healthcare providers is valuable in maintaining a mutual appreciation for changes in organizational and care structures while managing the COVID-19 crisis ⁸. One participant stated, *"my plans were dashed when this little thing call 'COVID-19' decided to show up and flip the whole world upside down. In spite of this, [clinical mentor] adapted, pulled some strings, and reached out to me to see if I wouldn't mind continuing the mentorship experience through Telehealth"* (P003). Another participant described the challenging decisions their clinical mentor faced while observing them and complexity of opioids in pain management. *"During my time observing, [clinical mentor] also saw people who were already taking opioids and had to make a judgment call over the phone about to communicate to both the patient and the provider when the patient was at high-risk for"*

complications from opioids” (P002). The changes in clinical mentorship and adapting to the pandemic is also demonstrated in figure 4 from a clinical mentor log from a participant who stated in a reflective post on teamwork and collaboration that they, “*jumped on the opportunity to receive mentorship from a professional who I respect from a discipline different from my own*” (P001). In reviewing the log, the response to COVID-19 interrupted the flow for topics of discussions with a 2-hour long reflection on COVID-19 then shifted to adaptation in the work environment then moving towards virtual care, grief, and acceptance. This participant was accepting of the online mentorship as they shared the success story of working with their clinical mentor in a reflective entry on their clinical mentor experience: “*Working with [clinical mentor] has helped me to develop a wealth of skills and knowledge that are both essential and yet also transcend the outer ranges of my competencies...these ‘soft skills’ that were not emphasized in my professional training are in fact the ‘hard skills,’ and they are complete game changers for me and my patients*” (P001).

Figure 5: Clinical Mentor Log

Interprofessional Pain Management – Clinical Mentorship Winter/Spring 2020

Record of Conversations			
Meeting Date	Topics of discussion	Duration	Total hours
Jan. 27, 2020	- Trauma & Recovery (Judith Herman) - The Cycle of Change (Prochaska & DiClemente) - Motivational Interviewing: Preparing People for Change - Challenged use of the terms “adaptive” and “maladaptive” - Career development/progression/changes - Topics to explore throughout mentorship	2.5 hours	2.5
Feb. 8, 2020	Secondary stress syndrome vs PTSD, burnout, compassion fatigue	2.5 hours	5
Feb. 23, 2020	- Communication – having difficult conversations with patients and loved ones	1.5 hours	6.5
Feb. 28, 2020	Case study, grief	1 hour	7.5
March 19, 2020	Response to Covid-19	2 hours	9.5
April 3, 2020	Adapting to changing work environments	2 hours	11.5
April 17, 2020	Fear and pain, heuristics, expectations, culture, acceptance	2.5 hours	14
April 25, 2020	Virtual care, Grief & Grief Counseling, Coping, Acceptance	1.5 hours	15.5

A clinical mentor log from one participant, which was included in their ePortfolio.

4.5 Lessons Learned

The goal of the program is that students undergo a truly transformative change in the ways they see themselves as, ‘providers of pain management,’ as it has not been rigorously explored. There are some limitations including the small sample size, data is from the first cohort only, and although the positionality of ZL is clearly stated in the methods section, the responses from the participants may have been different if the interviewer had no knowledge of the participants. The pandemic has certainly shown the resilience of healthcare workers, many of whom have sacrificed their lives in the line of duty, and healthcare system’s ability to adapt during adversity⁹. The data from this study describes adaptability, flexible online education programs, and strong mentorship from both academic and clinical advisors, which may suggest that these components in pain education may help to lead pain care providers to success. Each participant demonstrated the need for all competencies to develop a deeper understanding of the patient experience while simultaneously encouraging them to reflect on the impact of the pandemic. While mastering these competencies, COVID-19 produced additional stress including social isolation, uncertainty, and more for the IPM learners. At the same time, all the learners successfully completed the MCISc IPM program in August 2020 and highlighted several times throughout the interviews how rewarding the entire educational experience was. As participant 002 stated, “*the harder or difficult moments, they really make an impact on us, but I think those are the ones that almost forced change, right?... Part of the reason I wanted to do this program was that extra chance to be mentored and come through the competencies through that growth.*”

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Chapter 5

5 Conclusion

5.1 Summary

The first objective of this thesis was to describe the development and implementation of the new Interprofessional Pain Management field within the Advanced Healthcare Practice master's-level program at Western University. In conducting the environmental scan on comparable pain management programs there was often a feeling of scarcity in the literature and felt as if we were trying to make the impossible, possible. The literature was limited, and it seems as though the new program is the first of its kind in Canada. As an online and competency-based program, we worked to eliminate barriers of clinical workload by making the program flexible and accessible for learners. The working meeting, we held that is described in depth in Chapter 1 provided us with numerous suggestions and ideas. With the help of experts, faculty, and staff, the program came to life and was formally approved in May 2019.

The second objective and the biggest step in filling the gap of the unknown was conducting qualitative research to explore the stories and hear the lived experiences of learners participating in pain education. As more interprofessional pain education programs are developed around the world, it will be critical to establish a framework for evaluating these new curriculums and it may require assessment of learner competencies for improving collaboration for patients living with pain ¹. The first steps in evaluating the program were to understand the narratives of the learners, which is why all three studies took qualitative approaches by way of hermeneutic phenomenology. As a reminder, hermeneutic phenomenology as a research method is the study of experience together with its meanings, which is open to revision and reinterpretation ².

Study 1 (chapter 2) demonstrates the lived experience of physiotherapy students participating in an elective pain course. The narratives were thoughtful, insightful, and provided a sense of hope for future practice. Many participants showed motivation to become the best physiotherapist they could be while sharing stories of empathy, drive,

and passion. The study also revealed that many of the participants conceptualized a new understanding of pain. Limitations did include a convenience sample, which may mean that participants may have already had an investment in pain management. It was recommended to continue to explore ways for researchers and educators to include a more critical lens of pain into the physiotherapy curriculum and incorporating a more biopsychosocial approach while encouraging reflective practice to support future practitioners.

Study 2 (chapter 3) explored how the first cohort of the Interprofessional Pain Management field experienced participating in the new program that started in September 2019. This study provided a deeper understanding of each participants' journey throughout the program from their initial reasoning for applying to the program to transforming into a competent person-centred partner in pain care and what that meant to each learner. Learners shared how meaning making took place through dialogue with like-minded learners while also challenging ideas with the use of critical thinking. Interprofessionalism was found to be a valuable component through learning with and about others. Participants described in detail metaphors that represented them as pain care providers while also expressing their ideal practice. As this was a small sample size of four learners comparing this qualitative work with other cohorts would contribute to a larger understanding of the experience of participating in a pain management education program with an interprofessional lens and a competency-based framework. The goal of this work is to inspire others to implement pain management education in healthcare curricula. We also hope this also challenges practicing healthcare providers current pain care similarly to allyship as it is a verb that need constant reflection as well as practice.

Study 3 (chapter 4) also demonstrates the first cohort of the Interprofessional Pain Management field in participating in the program but focuses on the sudden change the took place in the program due to the current pandemic, COVID-19. Mentorship is a program requirement, and each learner was to submit a log of a minimum of 15 hours of clinical mentorship. The two research questions worked to answer (1) what was the experience with clinical mentoring during COVID-19 and (2) what was the experience as a practicing clinician in a clinical role while enrolled in the Interprofessional Pain

Management program during a global pandemic? Four themes were identified. The first described how important mentorship meant to the participants. The second explored how body language changed the dynamic in both mentorship and clinical encounters. The third examined isolation during a pandemic and how both clinical mentoring as well as clinical encounters experienced a shift for participants. Then finally the fourth included adaptation and acceptance during the COVID-19 crisis. This chapter was published in *Pain Medicine* and included a ‘lessons learned’ section where the limitations were described with the small sample size of one cohort while also highlighting the participant experience as a hardship, but part of a bigger change in their practice. The competencies that are described in depth in chapter one was often referred to in this study as the commentary explored the curriculum as a whole. Examples of change and challenges were not only taken from the in-depth interviews conducted, but also the ePortfolios produced by the participants. The research questions consistently overlapped in the findings as the participants shared their narratives of the ‘world upside down,’ while living through a pandemic, the experience as a clinical practitioner, and participating in a new master’s-level program.

5.2 Implications & Future Directions

The thesis purpose was to describe participants’ learning experiences in pain education in both pre- and post-licensure healthcare professionals. The aim was not to present generalized findings, but to encourage critical reflection⁹ and demonstrate transformation of learning. In the past 10 years, pain-related online programs for healthcare professionals has increased dramatically, but have yet to be rigorously evaluated especially for programs that are fall under the online learning³. The hope is that pain management will continue to expand in post-licensure education, but also in current curricula for health science programs. It has been argued that the growing emphasis on the biopsychosocial model and interprofessional decision-making in the management of persistent pain warrants a review of educational curricula to help better prepare practitioners for communication challenges⁴.

The Interprofessional Pain Management field follows a competency-based framework, professional competence may need to entail an integration of competencies by a habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, empathy, values, and reflection in daily practice for the benefit of all being provided pain care ⁵. While the competencies included in the program were created and developed with the help of many, it is important to reflect on the ever-changing healthcare system itself and understand that the framework established may evolve over time. Already some of the entrustable professional activities (EPAs) associated with the competencies have been altered and modified. In order to act responsibly as educators, the curriculum and the competencies will need constant reassessment. Academic accrediting bodies, professional regulatory bodies, and practice guidelines will most likely shape curricula through the regulations they impose ⁵, but it is also may be up to those presenting the competencies and even the learners themselves to ensure they remain person-centred. Further research and exploration of the competencies are recommended in determining the needs of learners and patients living in pain.

In following a person-centred approach, it is important to mention that some literature indicated that this approach is formed by the biopsychosocial model and professionalism contributed substantially ⁶. Although the person-centred approach and becoming a competent person-centred pain care provider is at the heart of the IPM program, it is important and realistic to remember that empathy has been described at the core of a person-centred and humanistic approach ⁷. Unfortunately, due to compassion fatigue and burnout, empathy and compassion are often misplaced or forgotten ⁸. In order to eliminate this occurrence, it is important to continue pedagogical practices or learning activities which allow learners to shape empathy they bring into the educational environment and utilize as a skill for healing ⁷. Learning empathy through simulation has been recommended throughout literature ⁸ and it is recommended in order to continue to focus and highlight the goal of a competent person-centred care provider to continue the search for pedagogical practices that foster this imperative skill.

5.3 Conclusion

Finally, communication was a consistent theme throughout all three studies whether it was the importance of practicing communication with patients for future physiotherapists; meaning making through dialogue with similar minded learners and experts; or was the lack of body language due to the restrictions of the COVID-19 pandemic. Through narratives and storytelling, meaning making took place as well as transformative learning. It is crucial in moving through this discourse that boundaries and goals may be always open to challenge so learners may avoid tunnel vision ¹⁰ and continue to work towards life-long learning. The hope is also that the transformational process leads participants to group empowerment¹¹ and, in this case, empowering persons living in pain. In this qualitative research findings can be used in educational curricula for pain care providers in transformational ways to enhance emotional intelligence, context sensitivity, empathic practice ¹², as well as the other competencies required for the IPM program. Ultimately, the findings from this research are viewed as a magical experience as taken-for-granted assumptions of pain or pain management become more layered, more nuanced, more unexpected, and transformative, which reveals the extraordinary ² accomplishments and potential for pain care providers.

The creation and implementation portion of developing the Interprofessional Pain Management field took two years to complete and although there were many challenges along the way, it is one of my biggest accomplishments as an academic. As mentioned in the first chapter, this thesis comes from a place of personal experience in living with persistent chronic pain. There were many days throughout the last four years, that my own health took precedence over my education; however, each challenge led to self-reflection and gratitude of this journey. Another major accomplishment that feels like a full circle moment is my transition from an administrative role in the field to a co-instructor of the special topics in pain management course, which is a required course for the program. I will also take on the role of an academic mentor to a future learner. I always hoped to continue my involvement in the program and am proud of the outcome of both this thesis as well as my future in pain management education.

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Appendices

Appendix A: Entrustable Professional Activities with Learning Activity Examples

1. Critical reasoning and creativity

1.1 Efficiently and effectively searches appropriate sources to find relevant knowledge.

Learning Activities:

1. *(Optional) Describe and interpret the Knowledge-to-Action model.*
2. *Pose a well-formed clinical question, create an appropriate search strategy, and conduct a search to identify and retrieve 3 pieces of relevant evidence.*

1.2 Efficiently and effectively summarize a peer-reviewed scientific paper

Learning Activities:

A. For this activity, learners are to review a relevant peer-reviewed published scientific paper, extract, and summarize the primary finding(s) of the study, limitations to interpretation, and the patient population to which these findings is/are likely most applicable. Include a short narrative on the key findings of the paper and whether, and how, the results would be applicable to their patient population.

Learners will have demonstrated completion of this task by adding the following to their portfolio:

1. *A copy of the article reviewed*
2. *Their summary of the main findings (in their own words)*
3. *Their summary of the limitations to interpretation*
4. *A short explanation of why or why not they would choose to apply the findings from this paper to their clinical population*

1.3 Evaluates new knowledge for trustworthiness and risk of bias.

Learning Activities:

1. *Evaluate the new sources of knowledge using an appropriate rating / risk of bias tool (e.g., CONSORT, GRADE, COMET, etc.).*
2. *Go to the EQUATOR network website (<https://www.equator-network.org/>) and select from among the tools listed there, an appropriate tool for evaluating the reporting quality and risk of bias in a paper related to diagnosis/screening, assessment, intervention, and outcomes measurement. Apply the tool to the paper*

and provide a brief interpretation of the results. Note that if you have taken PT9600 you may have already completed this task. Add it to your portfolio.

1.4 Interprets the findings of research to determine its applicability to the current problem.

Learning Activities:

1. *Select a published paper exploring any of the primary functions of pain care (diagnosis/screening, assessment, treatment, outcome measurement). First summarize the results of the paper and create a narrative that includes the findings, magnitude of effect, risk of bias, external validity (generalizability) and applicability to your clinical context. Next apply Nixon's seven-step framework for critical analysis of research and provide an interpretation of the work from a critical social science perspective. Address questions including: what are the underlying assumptions that guided the research question? Can you see the assumptions or biases of the researchers? Who might the work privilege? Who might it inadvertently harm, marginalise, or oppress?*

1.5 Effectively synthesizes research evidence with clinical experience/clinician heuristics and patient values to find appropriate solutions to clinical problems.

Learning Activities:

1. *Create a narrative case description to be included in the portfolio that describes the prior steps and defends the final solution (included with 3.6), including the clinical problem/question, the results of the literature search, their confidence in the findings about the current state of knowledge in the field, how patient values and resources, and their own heuristics/experience/values influenced the solution (and how it was received / carried out?).*
 - a. *A HOAC (Hypothesis-Oriented Algorithm for Clinicians) could be used as a template.*

1.6 Creates new relevant and ethically sound knowledge

Learning Activities:

1. *Synthesizes information from different sources to arrive at a new understanding of a topic, follows a rigorous and ethically sound design to create a case study or other scholarly output in accordance with publishable scientific standards.*
2. *Identify a public online conversation in the field of pain (e.g., on social media, blogs, video, or another public forum). Observe the conversations and apply new*

skills in critical appraisal and identifying assumptions to extract the values, biases, and positions of those engaged in the discussion. Consider the potential impacts of the conversation on members of the lay public, consumers of pain care, or other professional groups – who's opinions appear to be privileged and who's is being marginalised? How could this affect other providers or patients? Create a narrative summary of the discussion and a critical social perspective thereof.

2. Empathic Practice and Reasoning

2.1 Takes perspective and can subjectively experience another person's psychological state and intrinsic emotions.

Learning Activities:

1. *Group work with fellow learners to work through activities aimed at improving perspective taking skills (e.g., sharing stories of frustration, techniques for empathic communication including reflecting back and paraphrasing).*
 - a. *Record this experience either verbally, visually, or written.*

2.2 Identify and understand a person's feelings and perspective from an objective viewpoint.

Learning Activities:

1. *Participate in online collaboration with recorded or real patients and describe the person's perspective after listening to the patient story.*
 - a. *In listening to the patient's stories, what are you hearing? What biases or assumptions of your own may have been either challenged or strengthened as a result of listening to the lived experience of another person seeking pain care? How have your own biases been formed, and how could they have influenced your interactions with other patients in the same situation? If you were in the patient's shoes, how would you have felt?*

2.3 Construct appropriate responses to convey understanding of another's perspective.

Learning Activities:

1. *(Archived Option) Engage in small group discussions to demonstrate an understanding of others' perspectives and to practice empathic responses.*
 - a. *To be recorded*
2. *(Preferred Option): Record a client interview (short 4–5-minute part of an interview or history taking). Watch the interview and identify where emotional*

cues were disclosed and how you responded to them. Short written reflection on your own empathic responses to patient disclosures. As a follow-up, after a partner has provided their own review of your video (EPA 2.4) review their observations and consider whether there are behaviours, responses, or disclosures that you hadn't noticed or other things they describe that you feel would strengthen your own self-reflection

Example patient video resources, as additional material if necessary:

<https://www.caibe.org/resources/digital-stories>

2.4 Behaves in a non-judgmental, compassionate, tolerant, and empathic way towards patients regardless of sociocultural or ethnic background that respects others' ways of thinking

Learning Activities:

1. *Peer/Mentor review of an interaction through direct (or recorded) observation. The peer provides feedback and commentary on the interaction from a perspective of interpersonal connection, communication styles, and acknowledgement of patient stories and cues, and provides that back to the learner. The learner reviews the peer feedback and then re-watches their own video using this new perspective and completes their own reflective narrative on things they would do the same or different in a similar situation in the future.*

**Note* - Where recording or observation is not possible an alternative can be arranged. A Western University consent to record/photograph will be provided.*

2.5 Tracks changes in quality of the therapeutic alliance with patients

Learning Activities

1. *Uses a standardized tool for capturing aspects of the therapeutic alliance and asks patients to complete the tool multiple times over at least 1 month, then the learner reviews the scores to identify areas for personal development.*
 - a. *e.g., the Working Alliance Inventory*

3. Self-Awareness and Reflexivity

3.1 Explores and identifies critical incidents in their own personal and professional development.

Learning Activities:

1. *Creates a map of personal and professional development, including critical incidents from childhood through present day. Examples may include body mapping, autoethnography or photovoice.*
 - a. *Body Mapping*
 - b. *Autoethnography*
 - c. *Photovoice*

3.2 Describes and reflects upon his/her own cultural and societal biases that shape their understandings and perspective of health and healthcare

Learning Activities:

1. *Personal self-reflection focused not on a specific clinical interaction but a meta-cognitive exploration of their own personal health values, experiences, and perspectives. This could include reflections on the culture within which they grew up, learned, and currently live. Consider why they chose to enter their chosen profession in the first place and how it did, and/or continues to, fit with their personal values around health care.*

3.3 Uses reflection to develop deeper understanding of previous critical incidents.

Learning Activities:

1. *Identifies one professional and one personal critical incident that persists in their memories as important.*
 - a. *Think of childhood memories or first-time clinical experiences*
2. *Reflects upon these through the lens created by activities in 3.1 and 3.2 and considers how those prior critical incidents have shaped their current approaches to interpersonal interactions.*

3.4 Moves beyond reflection and critical thinking to benign introspection and thinks about what they are doing in their role as a clinician.

Learning Activities:

1. *Maintains a personal reflective diary every day for a one-week period. Expect to use the new awareness generated through 3.1-3.3 and apply that to current daily experiences/incidents/interactions.*

3.5 Sees self through the eyes of others

1. *Complete a personality style, social styles, or other such tool on yourself, and have a trusted friend or colleague complete the same tool as though they are*

answering the way they see you. Compare the results of the two scales, and complete a reflection on the areas that are rated similarly between the two of you (does this make sense? Can you see how other people see the same thing in you?) and those that are rated differently (why is it that other people may see something different in you than what you see in yourself?).

An example of this exercise is attached. This was done using the Strengths Finder at www.viacharacter.org

4. Interprofessional Collaboration

4.1 Demonstrates partnership in an interprofessional team.

Learning Activities:

1. *Access the ENHANCE providers practice toolkit and review the key concepts (primarily tables and figures)*
2. *(Option 1) IN a group explore the concepts described in the ENHANCE document, Discuss what it means to determine roles of each learner, describe what it takes to have a trusting relationship, discuss power sharing, compare, and contrast what multi-, inter-, and trans-disciplinary care looks like in practice. Each member then provides a short (1-2 page) written reflection on the similarities and difference in how each member conceptualized these things. Additional reading if needed:*
 - a. *Reading: Pettigrew & Troop, 2008 – Decreasing anxiety, increasing empathy and respect for others, and clarity about each other's roles*
 - b. *Intergroup Contact Theory*
3. *(Option 2) Provide a narrative on two things: First, a prior interprofessional experience (whether as part of your professional life or personal life) in which some aspect of good interprofessional practice was not met (e.g., roles not clarified, power not shared, trust not established, functioned as multidisciplinary rather than interdisciplinary team) and the effect of that on group dynamics and/or outcomes/deliverables from the group. Second, a short narrative on how the group of interprofessionals in our IPM program have established a good working relationship, how that has come to be formed, how long it took, and even any tensions along the way that needed to be overcome.*

4.2 Demonstrate teamwork and collaboration.

Learning Activities:

1. *Working in pairs - Record interaction with another learner via video then review with mentor, reflect, and provide feedback on each learner's teamwork and collaboration abilities.*
2. *(Preferred) Provide a reflective piece (2-3 pages in length) on your experiences of mentoring under another professional, whether within your own or another discipline. What biases or assumptions did you hold going in, what have you learned about that person and their approach to care, what will you take with you from those interactions?*

4.3 Interprets and seeks to understand patient health needs and concerns through a framework of social determinants of health and social equity

Learning Activities:

1. *Create a clinical guide for seeking and interpreting issues of social inequalities and determinants of health in patients and complete it for at least one patient.*
2. *Visit a community-based social support service and reflect on that experience (e.g., a food bank, soup kitchen, indigenous health centre, homeless shelter, or hospice)*
3. *Create an infographic or other short informational document/pamphlet describing practical implications of the socioenvironmental influence on pain that you presented in competency 5.5, that would be appropriate to provide to other healthcare providers*

4.4 Advocates on behalf of patients

Learning Activities:

1. *Write report on patient experience in an interprofessional setting and explains how advocacy took place and how the incorporation of the translation of knowledge in the area of pain management was executed.*

4.5 Establishes an effective working alliance with a patient

Learning Activities:

1. *Invite a patient to complete a Working Alliance Inventory based on their recent interactions with the clinician. The clinician independently reviews and interprets the responses and writes a short reflection on any practice areas they would like to improve or focus on.*

5. Pain Expertise

5.1 Describes and interprets pain from a comprehensive biopsychosocial paradigm

Learning Activities:

1. *Learners will be provided with a case at the start of the program and the same case at the end. Reflect and describe a shift in paradigm/thinking.*
 - a. *Learners may also choose their own case and present to academic mentor for approval*
 - b. *The attached paper describing the radar plot may provide a useful framework for this exercise*

5.2 Collects appropriate information to evaluate and interpret the effectiveness of their intervention plan

Learning Activities:

1. *Provide evidence in portfolio that learners routinely collect outcomes and interpret those to determine the effectiveness of their treatment. Where ineffective, the learners should provide some evidence that they change the course of treatment and re-evaluate outcomes. A defense of the patient outcome should also be included (why that measure, what did it tell you, how did it change your approach to treatment?)*

5.3 Appraises, synthesizes, and summarizes current knowledge on the biology of pain

Learning Activities:

1. *Learners will be assigned a 'system' to review (e.g., cortical plasticity, peripheral sensitization, immunological change, the pain genome, the pain microbiome, stress system dysregulation, sex differences, etc..) and give guidelines on how to conduct the review and a template for synthesizing the findings in a narrative review.*
 - a. *Create a synthesized document of 5 pages maximum, which will be presented to fellow learners.*

5.4 Appraises, synthesizes, and summarizes current knowledge on the psychology of pain

Learning Activities:

1. *Identify a psychological screening tool and searches, appraises, interprets, and synthesizes that information into a template or table that can serve as a reference for all members of the class.*
2. *Provide a critical social commentary on the rise of psychological conceptualizations of pain – how has work in this field helped people in pain? How may it have harmed them?*

5.5 Appraises, synthesizes, and summarizes current knowledge on the sociocultural aspects of pain

Learning Activities:

1. *A sociocultural influence will be assigned or chosen such as: gender roles, medicolegal culture, ethnicity as it pertains to pain expression, socioeconomic status, early life adversity, educational attainment, work status and availability, etc., then create an infographic or some other more creative means to sharing the information with fellow learners and add to e-Portfolio.*
 - a. *Infographic examples – see OWL*

5.6 Conducts a comprehensive assessment of patients in pain using clinically relevant, valid, and meaningful tools

Learning Activities:

1. *Choose a patient in clinic and selects appropriate assessment tools and techniques considering patient and clinical context, applies them properly, and interprets the results using the concepts of triangulation and the radar plot to arrive at a clinical phenotype.*
2. *A written defense of the questions asked and/or tools chosen after the fact will be required. This activity could use the same video recorded session as those in the empathic practice competency*
 - a. *Mentors will also observe the clinical practice and evaluate their interpretation of the tools.*

5.7 Establishes a prognosis / theragnosis for patients in pain

Learning Activities:

1. *Complete a written document describing their prognosis in terms of likely outcome based on the stage of the patient's condition and their knowledge of prognostic/theragnostic factors, clinical and natural course of the condition, and treatments available including effect size and any known moderators.*

5.8 Synthesizes information from the assessment and prognosis to create and implement a patient-centred and targeted intervention plan

Learning Activities:

1. *Describe intervention strategy clearly showing how it is linked to the assessment and prognosis results, including a section on how the intervention is targeted to that patient considering the patient context, and the systems/mechanisms that are believed to lead to clinical improvement. A description of how the treatment has been effective will be required.*
 - a. *What would a 'good' outcome be for this patient?*

5.9 Reviews, synthesizes, and critically explores a prominent pain model

1. *Select a published model of pain, including (but not limited to): the Gate Control Theory, the Neuromatrix Model, the Mature Organism Model, the Fear-Avoidance Model, the Biopsychosocial Model, the BioPsychoMotor Model, the Measurement Model of Pain, or others.*
 - a. *Select a seminal paper describing this model, and critically interpret it using the 7-step framework of Nixon and Colleges (Physical Therapy, 2017).*

Appendix B: Interview Guide for Study 1

1. Please describe your overall experience of taking the course, Understanding Pain in Rehabilitation.
2. What were your beliefs about pain prior to taking the course?
3. Have you had any experiences with pain prior to taking the course that you'd like to share?
4. Please describe any parts of the course that led to feelings of tension or anything that you found personally challenging to accept or deal with.
5. Did the course change any of your beliefs pain? If so, how?
6. Did you experience any "Ah-Ha" moments while taking the course? Please elaborate.

7. If you did have any “Ah-Ha” moments while taking this course, how has it changed your view of yourself as a future Physical Therapist?

8. What was your experience of writing in a reflective journal while enrolled in the course?

Thank you for answering those questions, now we are going to change the focus a little bit and I am going to ask you questions about how you think about your identity as a future Physical Therapist.

9. What does the term ‘professional identity’ mean to you?

10. Can you describe your thoughts about what it means to be a Physical Therapist before you started the MPT program at Western?

11. In what ways have your experiences in this course (Understanding Pain in Rehabilitation) shaped your professional identity with regards to becoming a healthcare professional helping people manage their pain?

Probe: Has this course changed the way you see your future practice as a physical therapist? If so, in what ways?

Appendix C: Interview Guide for Study 2 and Study 3

Research Questions	Objectives
<p>1. What motivated you to enroll in this program?</p> <p>Prompts:</p> <ul style="list-style-type: none"> • Did you expect this program to impact your practice? How so? • What professional or personal experiences led you to applying? • What were your hopes in applying to this program? • How comfortable did you feel about your competence in pain management prior to applying? 	<p>Determine the experience for applying to the new alternative program.</p> <p>Determine the reasoning for applying to the new alternative program.</p> <p>Identify what experiences led the participants to applying.</p> <p>Identify if the participants expectations were met in regard to the program.</p>

<p>2. Please describe your experience in the Interprofessional Pain Management program.</p> <p>Prompts:</p> <ul style="list-style-type: none"> • What challenges have you faced during the program? • Did you have any transformative experiences during the program? Some people call these ‘ah-ha’ moments. • Have you noticed any change in your practice behaviours? • Have you stepped outside of your comfort zone? How did that go? • What was it like keeping a portfolio? 	<p>Interview learners on their lived experience of learning about pain in the MCIsc Interprofessional Pain Management (IPM) program.</p> <p>Identify how participants understanding of pain has changed.</p> <p>Interview participants to determine if they experienced challenges while enrolled in the IPM program.</p>
<p>3. In what ways have your experiences in the program changed how you think about pain or pain management?</p> <p>Prompts:</p> <ul style="list-style-type: none"> • What were your understandings about pain prior to the program? • How did you see yourself as a partner in pain care prior to the program? • Have you looked at pain differently? Have your views changed or been challenged? • Have you looked at pain management differently? • Have your views changed or been challenged? • How do you think this experience has shaped your view of pain overall? • Are there any examples from your practice you would be willing to share? 	<p>Identify participants personal beliefs of pain prior to enrolling in the program.</p> <p>Identify current personal beliefs of pain while in the program.</p> <p>Determine if the experience of being in the program has changed participants’ clinical practice.</p> <p>Determine if the experience of being in the program has changed participants’ views of pain overall.</p>

<p>4. In what ways have your experiences in the program shaped how you think about yourself as a pain care provider?</p> <p>Prompts:</p> <ul style="list-style-type: none"> • In what ways, if at all, has this experience shaped how you view yourself as a pain care provider? • What core values or beliefs do you hold related to working as a pain care provider? Have these changed? • In what ways if at all have you changed as a professional as a result of this experience? • What do you think constitutes competence in a pain-care provider? • What do you think constitutes effectiveness in a pain-care provider? 	<p>Determine how participants define their professional identities.</p> <p>Identify if the participants feel that the IPM program will impact their future clinical practice.</p> <p>Determine if participant's beliefs, assumptions about pain changed since enrolling in the IPM program.</p> <p>In what ways was participation IPM program perceived by participants to shape their professional identity?</p>
<p>5. Can you provide a metaphor for yourself as a pain care provider?</p> <p>Prompts</p> <ul style="list-style-type: none"> • In thinking of a metaphor, have you thought of yourself as something other than a health-care provider? Some examples others have used to describe themselves and/or a metaphor in similar studies include: juggler, stark trek enterprise captain, karate instructor, a cook, a recipe, the human body...do you relate to any of these? • What is your ideal practice? What does that look like? • How would your patients and colleagues describe you as a pain-care provider? • How would your family and friends describe you as a pain-care provider? • Do you feel that you have changed as a clinician over the course of being in this program? If so, how? 	<p>Identify any metaphors the participants relate to as pain care providers.</p> <p>Determine participants ideal pain care practice.</p> <p>Identify if there are changes in participants care since being enrolled in the program.</p> <p>Determine if participants have changed how, they view practice as a pain care provider.</p>

6. Do you have any final thoughts you would like to share?	<p>Overall thoughts of the program.</p> <p>Any additions to previous questions asked.</p> <p>Time for participants to ask the interviewer questions.</p>
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The interview guide includes questions asked to each participant with additional prompts to engage in dialogue followed by the objective for each question.

Appendix D: Major Modifications to an Existing Graduate Program

1. The Program Name and Degree for which the modification is proposed

Master of Clinical Science (MCISc) - Advanced Health Care Practice (AHCP)
(School of Physical Therapy, Faculty of Health Sciences)

2. A brief description of the proposed modification

The MCISc program in AHCP is a one-year, course-based master's program. It has provided graduate-level education to more than 300 students since 2007. There are two existing fields: Manipulative Therapy, and Wound Healing. Successful completion of seven courses is required in each field, including two academic courses [Professionalism, and Research Methods], and two clinical specialty courses specific to each field. Students also complete a research project (PT 9630y) and engage in a Clinical Mentorship experience throughout the year (PT 9620y). The program also requires three, 2-week onsite residency periods (one each term) and completion of online modules. During the onsite residency periods, students participate in class discussions and clinical skill development with fellow students and instructors. For the remainder of the term, students complete online modules using Western's online learning management system (OWL). (see MCISc Program & Course descriptions (Appendix A))

We are requesting:

1. the addition of two new fields of study to the MCISc-AHCP). These are:
 - a. ***Interprofessional Pain Management (IPM)***

This field uses a competency-based approach to develop key clinical knowledge, skills, attitudes, and behaviors relating to (i) pain and its clinical management, and (ii) interprofessional practice, reflexivity, and person-centred care.

b. Applied Health Sciences (AHS)

This will be an online course-based field designed to provide students both depth and breadth of knowledge in the health sciences and optimize students' capacities to make meaningful contributions to the health and wellbeing of people across Canada and worldwide. The Applied Health Sciences field will facilitate learning opportunities for engagement in both structured and self-directed knowledge synthesis and knowledge application in authentic, interprofessional contexts.

2. that specific courses offered through the Graduate Diploma in Applied Health Sciences be given MCISc course codes (see Appendix B for Graduate Diploma Course listing with descriptions). The rationale for this change is that these courses will fulfil course requirements of the MCISc.

3. A brief description of the rationale for the modification (e.g., explain how the program will be improved and/or how students will benefit from the proposed modification)

The health care system in Canada is multifaceted and complex. Health care providers must be able to navigate the system to meet the needs of users, including the aging population with chronic health conditions. Surveys of providers reveal that few health care providers feel they possess the knowledge, skills, or attitudes to perform effectively in these challenging work environments. Educational programs, like the MCISc, are needed to provide a combination of academic and clinical experiences at an advanced level that will better prepare health care providers for the future.

Emerging evidence suggests that interdisciplinary models of care are more effective in managing complex conditions such as chronic wounds and chronic pain. There are few opportunities for interdisciplinary education in existing entry-

to-practice-level programs for health care professionals. The depth and breadth of knowledge and experience needed on interdisciplinary care teams should come from a variety of disciplines who collectively bring clinical and non-clinical expertise to the health care endeavor. For example, understandings related to project management, program evaluation, critical thinking, and knowledge translation are essential in today's health care environment.

The two new fields in the MCISc program will help meet the needs for advanced-level education in health care and bring together students from various health-science-related disciplines. By coalescing courses available across four fields of study, we will provide expanded opportunities for interdisciplinary online education in health sciences and allow greater diversity and experiences amongst fellow students. The cross-listing of graduate courses in the Graduate Diploma in Applied Health Sciences will enable more options for students to customize their elective course selections for their learning needs.

Additionally, and more specifically, we propose the introduction of a *competency-based* student-centred approach to the IPM field. In a 'competency-based' educational framework, students focus on the development of core competencies until they have accrued an appropriate level of evidence to demonstrate mastery in the eyes of mentors, experts, and examiners. This unlinks *time on task* from competency *mastery*, and respects diverse learning styles, strategies, and pace of the students themselves. This framework also effectively reduces barriers to participation by engaging students in their own work environments. Unlike conventional course-based education, wherein students focus on learning specific content for a set period, at the core of competency-based learning is that work on achieving all the required competencies can start simultaneously and achievement of competencies is realized when the student is ready. The philosophy of this approach in the IPM field will see learning and education, including assessment of learning outcomes, move away from a 'can the student perform this' to a 'does the student perform this' priority, making learning outcomes necessarily connected with actual clinical behaviours. The learning experience becomes

customized to the student's goals, recognizing prior experience and knowledge. Academic and clinical mentors, as well as content experts, help guide the student on their learning journey. See list of potential Faculty who are willing to support this field: Appendix C).

Another unique feature of this educational approach is the involvement of people with lived experience such as patients, family members, and care providers who will help inform the student's competency development. The instructional methods include a variety of 'Entrustable Professional Activities' (EPAs). These EPAs collectively would be considered evidence towards mastery of each of the required competencies (see examples of EPAs in Appendix D). Some EPAs may involve completion of one or more traditional courses to support development of knowledge or practice for a specific competency. For example, these may include the new proposed IPM course called Special Topics in Pain Management (see below), courses currently offered in the Graduate Diploma in Applied Health Science (Appendix B), courses in the MClSc program (Appendix A), or other graduate courses offered via distance education at Western.

It is noteworthy that this innovative teaching approach was recognized by a Fellowship in Teaching Innovation Award given to Dr. Dave Walton, Associate Professor in Physical Therapy. Part of the current proposal is a product of protected time that the teaching fellowship afforded Dr. Walton to design and develop Western's first competency-based graduate-level learning experience in Pain. It is intended that this new educational framework will prepare advanced practitioners who can better address recent public health crises including the chronic pain epidemic and the opioid crisis.

BRIEF DESCRIPTION of PROPOSED NEW INTERDISCIPLINARY PAIN MANAGEMENT (IPM) field.

There are five key competencies that a student must master by the end of the program. These are:

- 1) Interprofessional Collaboration

- 2) Self-Awareness and Reflexivity
- 3) Critical Reasoning and Creative Problem-Solving
- 4) Empathic Practice and Reasoning
- 5) Pain Expertise

Students will be assigned to an academic mentor with whom they will meet soon after enrollment. They will review the student's record of prior learning and experiences so that the student can develop a plan of study that will allow fulfilment of field progression requirements by the end of the 1-year course of study. The plan of study will identify Entrustable Professional Activities (EPAs – see examples in Appendix D) and graduate courses that will help the student master the five required competencies. In setting up each student's plan of study, past experiences and former education will be recognized when deciding what additional learning activities (EPAs) are required to complete each competency. The mentor and student will identify appropriate clinical mentors, clinical experts, and other key persons who will support the identified learning goals. *[See paragraph below for a description of the roles of different faculty members guiding students in this competency-based field.]* Some students may wish to focus on a single competency first and accrue evidence of mastery before moving on to the next, while others may choose to simultaneously pursue all five competencies. Once the student and the academic mentor determine that one or more competencies have been met, the student will submit the evidence in the form of a portfolio to one or more examiner(s). It is important to note that, no matter where a student starts within the competencies, they are all integrated such that one cannot be fully developed without also developing at least some degree of mastery of the others. The ultimate outcome is that each student becomes a 'Competent Person-Centred Partner in Pain Care'. A list of the IPM field objectives as they relate to master's level degree expectations and linked to instructional methods and evaluation outcomes is shown in Table 1.

Table 1:

Interprofessional Pain Management Field meets MClSc Degree Level Expectations

Degree Level Expectations	Field-Level Learning Outcomes	How does the field support learning? (e.g., instructional methods)	How does the field assess the outcome? (e.g., evaluation methods)
<p>1. Depth and Breadth of Knowledge</p> <p>A systematic understanding of knowledge and a critical awareness of current problems, and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study, or area of professional practice</p>	<p>A. Practice in an advanced role in an ethical and legal manner that reflects an understanding of human values, diversity, health, social, and cultural differences</p> <p>B. Use adult learning principles to develop and deliver education programs for health care professionals, skilled health care providers, patients, and caregivers that promote the adoption of interventions in clinical practice and in self-management programs of patients</p>	<ul style="list-style-type: none"> • Dialogue and sharing understandings with Academic Mentor at biweekly meetings • Online synchronous and asynchronous learning support active dialogue and engagement in and completion of recommended course work • Integration of learning by using clinically relevant, valid, and meaningful tools for comprehensive pain assessments • Open dialogue and critiques of assessment data, proposed prognosis/theranosis for patients in pain, and patient-centred and targeted intervention plan • Attention to relevant Entrustable Professional Activities to enhance depth and breadth of knowledge 	<ul style="list-style-type: none"> • e-Portfolio that includes past experiences as a clinician and reflective thoughts about personal development • Plan of study reviewed by academic mentor bi-weekly and examined by external examiner once a competency is determined to be mastered • Evaluation of a personal reflection on a visit to a community-based social support service • Creation and submission a map of personal and professional development (milestone) • Quality of contributions to and active presence in online forums • Quality of pain assessments with proposed diagnoses and theranoses and targeted patient centred intervention plans
<p>2. Research & Scholarship</p> <p>A conceptual understanding and methodological competence that:</p> <p>a. Enables a working comprehension of how established techniques of research and inquiry are used to create and interpret knowledge in the discipline.</p> <p>b. Enables a critical evaluation of current research and scholarship in the discipline or area</p>	<p>A. Develop research skills that will facilitate active participation in clinical research</p> <p>B. Use appropriate research strategies to explore patient-centred and targeted pain intervention plans</p> <p>C. Adopt emerging research evidence in the area of clinical specialty</p> <p>D. Defend choice of research methodologies in examining, creating, and recommending interventions</p>	<ul style="list-style-type: none"> • Collaboration with academic and clinical mentors to integrate knowledge by effectively synthesizing research evidence with clinical experience/clinician heuristics and patient values to find appropriate solutions to clinical problems • Focus on Entrustable Professional Activities that promote inquiry, knowledge development, and evaluation 	<ul style="list-style-type: none"> • E-portfolio • Evaluation of new sources of knowledge using appropriate rating/risk of bias tool (e.g., CONSORT, GRADE, COMET, etc...), to be included in the e-portfolio and reviewed by an examiner • Rubric-based evaluation of a narrative case description • Examiner evaluation of a scholarly product (case study, autoethnography or scientific paper) • Active participation in online interprofessional discussions • Efficiency and effectiveness of search strategies to find relevant knowledge • Evaluation framework of new knowledge for trustworthiness and risk of bias • Applicability of research findings to a patient problem and appropriateness of interpretation • Narrative of interpretation of new sources of knowledge • Creation of a new relevant and ethically-sound knowledge product based on a real-world clinical case

of professional
competence

c. Enables a treatment of
complex issues and
judgements based on
established principles
and techniques; and

On the basis of that
competence has shown
at least one of the
following:

a) the development and
support of a sustained
argument in written
form; or b) originality in
the application of
knowledge

3. Level of Application of Knowledge

Competence in the
research process by
applying an existing
body of knowledge in
the critical analysis of a
new question or a
specific problem or
issues in a new setting

- A. Critically appraise experimental and clinical research, best practice guidelines, and other innovative approaches
- B. Incorporate relevant and highly quality research into clinical practice, educational programs, and professional activities
- C. Use exemplary clinical skills together with advanced clinical reasoning and critical thinking skills to assess and manage patients with complex clinical presentations of pain

- Pedagogy aligns with competency-based education and completion of Entrustable Professional Activities
- Integration of learning through active presence, dialogue, and co-construction of knowledge and understandings through inter-professional and inter-disciplinary collaboration among a community of scholars
- In-depth analysis and critique of information from multiple perspectives promotes healthy debate about outcomes of a course of treatment with a view to deepen personal and others' value systems
- Inter-professional and interdisciplinary nature of courses provides multiple opportunities to respect contributions of others and evaluate outcomes through a critical reflexivity lens
- Authenticity and applicability of knowledge using Entrustable Professional Activities that promote competence in knowledge

- E-Portfolio evaluation of radar plot interpretation and evaluation of treatment outcomes
- Narrative summary as part of the e-portfolio including risk of bias (building on prior knowledge one aspect of each of the biology, psychology, and sociocultural aspects of pain)
- Rubric-based evaluation of student's reflection and description of a shift in paradigm/thinking on a real-world clinical case
- Infographic of biopsychosocial pain influences and evaluation of infographic from a critical social science perspective
- Written document describing a novel chronic pain treatment paradigm to be presented to fellow students
- Evaluation of the quality of a synthesized document outlining a chronic pain treatment paradigm.
- Peer evaluation of the novel chronic pain treatment with feedback included in the e-Portfolio.

development and appraisal

<p>4. Professional Capacity and Autonomy</p> <p>a. The qualities and transferable skills necessary for employment requiring:</p> <p>i. the exercise of initiative and of personal responsibility and accountability and</p> <p>ii. Decision making in complex situations.</p> <p>b. The intellectual independence required for continuing professional development.</p> <p>c) The ethical behavior consistent with academic integrity and the use of appropriate guidelines and procedures for responsible research; and</p> <p>d) The ability to appreciate the broader implications of applying knowledge to particular contexts</p> <p>5. Level of Communication Skills</p>	<p>A. Take on a leadership role at a regional, provincial, or national level in academia, governmental relations, health care institutions, professional organizations, or regulatory bodies</p> <p>B. Mentor, educate, coach, and foster the development of colleagues and new clinicians in your region and circle of influence</p> <p>C. Reconcile understandings of personal health values with those of others</p> <p>D. Act in accordance with one's ethical and moral compass to reflect equity, fairness, and accountability for one's behaviours</p> <p>A. Develop communication strategies that foster collaborative and productive interactions with clinical colleagues,</p>	<ul style="list-style-type: none"> • Pedagogy aligns with competency -based education and completion of Entrustable Professional Activities • Facilitated exploration and identification of critical incidents in students' personal and professional development • Co-construction of understandings about the role of other members in an interprofessional team, and the criteria for making a referral to another professional • Opportunities to work with patients completing a pain-related assessment form using a cognitive debriefing strategy 'think-aloud' • Video capture of a patient interaction and debriefing. Where video capture is prohibited, mentor or colleague observes an 	<ul style="list-style-type: none"> • Academic mentor guidance and evaluation of the critical incident reflection • Peer feedback on the accuracy of the student's understanding of each person's professional role in a pain clinical encounter. The feedback is included as part of the e-Portfolio. • Inclusion of cognitive debriefing narrative as part of the e-Portfolio review. • Effectively communicate and defend one's position on an issue of relevance to the pain population (e.g., the opioid crisis) and creation of an argument in favor of an <i>alternative</i> view of that issue. • Examiner review and evaluation (pass/fail) on the argument against the student's previously held position on an issue of social importance. • Narrative of 'a-ha' moments from cognitive debriefing experience • Personal reflection of patient interaction focusing on what the student looks like 'from the perspective of another person'. • Constructive dialogue that shows evidence of respect, patience, and tolerance for others'
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The ability to communicate ideas, issues, and conclusions clearly.	<p>health care decision makers, and consumers.</p> <p>B. Employ communication strategies that foster the therapeutic alliance with the patient and show how the use of appropriate words can be a powerful tool to enhance patient outcomes</p> <p>C. Express value judgments with appreciation of others' value systems</p>	<p>interaction and debriefs with the student</p> <ul style="list-style-type: none"> • Inter-professional and interdisciplinary nature of courses encourages cooperation, reflexivity, and co-creation of knowledge through online dialogue with a community of scholars • Track change in quality of the therapeutic alliance with patients using a standardized measure (e.g., the Working Alliance Inventory) • Take perspective and interpret another person's psychological state through open dialogue and feedback. Reflect upon the experience of 'guessing' another person's emotions. • Capture an experience (written documents or a narrative description) of an experience of advocating on behalf of either a patient or an issue of social equity / access, describe the outcome where one is available. 	<p>points of view.</p> <ul style="list-style-type: none"> • Evaluation will largely be through inclusion of each Entrustable Professional Activity within the student's e-Portfolio, to be provided to an examiner as a <i>corpus</i> of evidence of mastery. These will include: <ul style="list-style-type: none"> ○ Provision of scores on the standardized therapeutic alliance measure and a brief interpretation thereof ○ Examiner's evaluation of the video recorded clinical interaction, and evidence that the student's experience aligns with what actually appears to have happened. ○ Rubric-based evaluation of empathy reflections. ○ Evidence of advocacy
<p>6. Awareness of Limits of Knowledge</p> <p>Cognizant of the complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines.</p>	<p>A. Develop life-long self-reflection skills to assess both cognitive and non-cognitive bias that may impact client care. The development of self-reflections skills creates the awareness of knowledge limits and how interpretation of knowledge may differ or change over time</p>	<ul style="list-style-type: none"> • Opportunities for self-reflection and debriefing of clinical interactions and meta-cognitive exploration of own personal health values, experiences, and perspectives. 	<ul style="list-style-type: none"> • Personal reflections • 'personal ethnography' of one's own background, with a specific focus on how key values around pain, including stigma, acceptance, and feelings of personal inadequacy (if relevant), have been shaped through prior life experiences. • e-Portfolio • Roadmap of personal ongoing professional development reflecting directions and strategies for lifelong learning upon completion of course of study.

IPM Field Faculty Member Roles

All students will be assigned an *Academic Mentor* with whom they will meet using virtual technology at the start of the program and regularly throughout their learning journey to develop and refine a customized plan of study. Students will

also identify a ***Clinical Mentor*** who can provide a clinical or real-life perspective to the new knowledge gained by the student. This Clinical Mentor will be a respected colleague who is able to speak frankly about the student's progress as a competent healthcare professional. Students will also have access to ***Content Experts*** who will add richness to the learning journey. The experts will be from diverse backgrounds, not all in health sciences, but all with deep knowledge of a specific competency (See Appendix C). Through 90-minute online interactive sessions, students and content experts can address gaps in knowledge and/or review relevant research evidence to help develop critical reasoning skills.

Independent Examiners will review an electronic portfolio generated by the student according to completion of EPAs identified in their plan of study and determine whether there is evidence of mastery of that competency or required milestone. Where a student is unsuccessful in their first attempt, they will receive detailed written feedback identifying any area(s) of deficiency along with an outline of recommendations for remediation. The IPM field committee, a subcommittee of the MCISc program committee, will be responsible for approving Faculty who will serve in one of four roles in IPM (Academic Mentor, Clinical Mentor, Content Experts, and Independent Examiners). A list of potential faculty members who have expressed interest in participating in the IPM field is provided in Appendix C. The customized approach to a student's learning will be solidified by a signed learning agreement that clearly outlines expectations of both students and faculty members who are involved in one of the above noted roles.

IPM Field Progression Requirements (see below for description of each requirement)

MILESTONES

1. Mastery of 5 key competencies in the IPM field:
 - a) Interprofessional Collaboration
 - b) Self-Awareness and Reflexivity
 - c) Critical Reasoning and Creative Problem-Solving
 - d) Empathic Practice and Reasoning and
 - e) Pain Expertise

2. Maintenance of an up-to-date plan of study that clearly outlines each student's required learning activities (EPAs)
3. Completion of a clinical mentorship experience
4. Creation of a scholarly product that demonstrates the student's ability to appraise new information and apply new knowledge to practice

TWO REQUIRED COURSES

1. Required field-specific course 'Special topics in Pain Management' (see below)
2. A course focusing on scholarly inquiry and critical thinking and critical appraisal of research (e.g., PT 9600 or APPHLSCI 9013)

IPM Field: Description of Required Experiences and Courses

Required Courses: In keeping with the spirit of a competency-based education, required coursework is not the focus of this field. Rather, the competency milestones are the primary method for acquiring new information and demonstrating new knowledge. One new field-specific course has been designed to provide critical background information for all students.

Field-specific course: A new course, 'Special Topics in Pain Management', will be developed and coordinated by Dr. Dave Walton. This will be a 13-session (26-hour, 0.5 FCE) online course delivered through synchronous web-based conferencing technology that will foster a strong community-of-learning amongst students enrolled in the field. It will be a team-taught course through which experts in different pain-related topic areas engage students in online discussions regarding pain and its management. Sessions will be recorded for those who are unable to attend synchronously. This course will also be used as evidence towards mastery of the 'Pain Expertise' competency. Evaluation will be through two methods: submission of questions through the online portal for the expert prior to each session, and creation of an essay style paper (5 pages max) through which students will reflect upon one key topic of learning during the course. This will be evaluated by the course coordinator.

Clinical Mentorship: Achieving this milestone will require:

- a) engagement with approved clinical mentors,

- b) submission of an engagement log at the end of each term demonstrating the hours completed and the nature of the mentorship, and
- c) a minimum of 5 hrs/term (15 hours total) of direct interaction between student and clinical mentor. These critical interactions should also be captured throughout the student's portfolio as evidence of mastery of one or more of the required competencies.

Scholarly Product: Students will be involved in research related to IPM.

Academic mentors will support and extend coursework-based student learning with the goal developing the student's abilities to engage in scholarly critical inquiry by generating a piece of work that should be of publishable quality. The scholarly product may take the form of a case study, autoethnography, grant proposal, or primary research study. Students will provide reflexive memos of their progress to incorporate into their portfolio as evidence towards mastery of the competency called 'Critical Reasoning and Creative Problem-Solving'.

BRIEF DESCRIPTION OF PROPOSED APPLIED HEALTH SCIENCES (AHS) FIELD

The pedagogical cornerstones of the **Applied Health Sciences (AHS) Field** of the **Master of Clinical Science, Advanced Health-Care Practice (AHCP)**, are:

- a) authentic learning,
- b) interprofessional education, and
- c) interactive engagement.

Authentic learning, or situated learning, is based on the principle that learning will be optimized when it occurs in a manner that closely resembles the way that knowledge will be used (Herrington and Oliver, 2000). This pedagogical approach lends itself to several delivery approaches, including: (i) providing authentic learning contexts and activities, (ii) learning within a community of practice that includes multiple perspectives, (iii) providing opportunities for reflection and articulation, and (iv) employing contextualized learning assessments. Problem-based learning, and its variant, case-based learning, also support authentic learning (Barrows, 1986). These approaches are particularly well suited to health-sciences education insofar as professionals appear to learn optimally through experience, reflective action, and

learning mediated by context; authentic learning tending to enhance the transfer of new learning into self-practice (Webster-Wright, 2009).

Interprofessional education supports many of the elements of authentic learning. Interprofessional education refers to learning within a pluralistic context that recognizes and values the contributions of a range of professions/disciplines, and further recognizes that enhanced learning outcomes can be achieved through the collaborative participation of people of diverse backgrounds and perspectives. Interprofessional education facilitates the development of a broad vision on the part of a student.

Interactive engagement refers to active learning activities in which students interact frequently in small groups to grapple with concepts and questions. It has been associated with improved learning outcomes.

The proposed AHS field is conceptualized as having two entry points. One point of entry is through the existing Graduate Diploma in AHS where students will have successfully completed up to 2.5 FCE credits of the 3.5 FCE credits required to complete the MCISc AHS. The second point of entry is direct entry into the MCISc AHS field. In this latter case, students will be required to complete 3.5 FCE credits from a variety of courses offered through the MCISc program (see courses described in both Appendix A and B).

A list of proposed faculty members in the proposed AHS field is provided in Appendix E.

Learning outcomes for the AHS field, as they relate to master's Level Degree Expectations, and linked to instructional methods and evaluation outcomes, are shown in Table 2.

Table 2. *Applied Health Science Courses Meet Master's Degree Level Expectations*

Degree Level Expectations	Field Specific Learning Outcomes	How does the program support learning? (e.g., instructional methods)	How does the program assess the outcome? (e.g., evaluation methods)
<p>1. Depth and Breadth of Knowledge</p> <p>A systematic understanding of knowledge and a critical awareness of current problems, and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study, or area of professional practice</p>	<p>A. appraise the scope and complexity of the body of knowledge in health sciences and health care</p> <p>B. differentiate among various facets of health sciences and explain their interconnections</p> <p>C. value the interrelationships of health knowledge applied by different professions and disciplines</p> <p>D. articulate one's belief systems about professional practice and reflect on one's individual behaviours</p>	<ul style="list-style-type: none"> ● pedagogical alignment with Authentic Learning ● completion of three mandatory courses and elective courses ● integration of learning through completion of a self-directed knowledge synthesis and application capstone course ● open dialogue and co-construction of knowledge and understandings through inter-professional and inter-disciplinary collaboration among students and faculty ● attention to course design and active facilitation by teams of inter-professional and inter-disciplinary experts 	<ul style="list-style-type: none"> ● essay assignments and /or portfolio relating course learnings to student's individual health employment context ● online commentaries, presentations, and shared perspectives ● scenario-based evaluation and complex case analyses ● participation in collaborative websites such as wikis, google docs ● reflexivity through constructive dialogue, self-reflection, and peer feedback ● online presence and active inter-professional/inter-disciplinary substantive and constructive dialogue ● quality of capstone outcomes and achievement of goals outlined in learning contract

<p>2. Research & Scholarship</p> <p>A conceptual understanding and methodological competence that:</p> <p>a. Enables a working comprehension of how established techniques of research and inquiry are used to create and interpret knowledge in the discipline.</p> <p>b. Enables a critical evaluation of current research and scholarship in the discipline or area of professional competence</p> <p>c. Enables a treatment of complex issues and judgements based on established principles and techniques; and</p> <p>On the basis of that competence has shown at least one of the following:</p> <p>a) the development and support of a sustained argument in written form; or</p> <p>b) originality in the application of knowledge</p>	<p>A. develop an understanding of the concepts of critical thinking and critical analysis, and appreciate how these approaches inform the examination of health and healthcare</p> <p>B. defend the choice of research methodologies in examining, creating, and recommending health care alternatives</p> <p>C. use appropriate research strategies to explore health information</p> <p>D. synthesize complex knowledge in a rapidly evolving health-sciences evidence base</p> <p>E. articulate verbally and in writing relevant arguments of complex issues grounded in ethical principles and practices</p>	<ul style="list-style-type: none"> • completion of three mandatory and elective courses that offer opportunities to critically analyze information/evidence in inter-professional and inter-disciplinary contexts of health sciences • integration of learning through a learning contract as part of the self-directed knowledge synthesis and application capstone course • dialogue and co-construction of knowledge and understandings through inter-professional and inter-disciplinary collaboration among students and faculty • attention to course design and facilitation by teams of inter-professional and inter-disciplinary experts 	<ul style="list-style-type: none"> • inquiry-guided learning • efficiency and effectiveness of search strategies to find relevant information • oral presentations, including critical appraisals of evidence using sound analytical evidence-informed arguments • application assignments and /or portfolio relating research knowledge to student's individual health employment context • online presence and active inter-professional/inter-disciplinary substantive and constructive dialogue • case assignments and presentations with original thoughts and evidence-informed critical argumentation • reflexivity through constructive dialogue, self-reflection, and peer feedback • quality of capstone outcomes and achievement of goals related to knowledge development and synthesis outlined in learning contract
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<p>3. Level of Application of Knowledge</p> <p>Competence in the research process by applying an existing body of knowledge in the critical analysis of a new question or a specific problem or issues in a new setting</p>	<p>A. critically analyze health issues in light of new and existing knowledge and perspectives, through application to a range of health questions in a variety of contexts</p> <p>B. formulate new inferences based on critical analysis</p>	<ul style="list-style-type: none"> ● pedagogical alignment with Authentic Learning ● concept-based, problem-based, and case-based learning scenarios as well as simulation learning ● contextualized presentation of content through active learning as well as small group work and presentations ● context of learning is authentic and student-driven and relevant to students' contexts and interests 	<ul style="list-style-type: none"> ● application assignments and /or portfolio relating course learnings to student's individual health employment context or interests ● individual and group assignments, case analyses, and presentations ● reflexivity through constructive dialogue, self-reflection, peer feedback ● contribution to new or existing research project through meaningful engagement with inter-professional and inter-disciplinary experts ● online presence and active inter-professional/inter-disciplinary substantive and constructive dialogue ● quality of capstone outcomes that demonstrate critical analysis of goals achieved in learning contract
<p>4. Professional Capacity and Autonomy</p> <p>a. The qualities and transferable skills necessary for employment requiring:</p> <p>i. the exercise of initiative and of personal responsibility and accountability and</p> <p>ii. Decision making in complex situations.</p> <p>b. The intellectual independence required for continuing professional development.</p> <p>c) The ethical behavior consistent with academic integrity and the use of appropriate guidelines and procedures for</p>	<p>A. contribute to human health potential through critical understandings and appraisal of complex health information and interprofessional and interdisciplinary health contexts</p> <p>B. reconcile one's understandings of personal health values with those of others</p> <p>C. act in accordance with one's ethical and moral compass to reflect equity, fairness, and accountability for one's behaviours</p>	<ul style="list-style-type: none"> ● pedagogical alignment with Authentic Learning, ● co-construction of knowledge, reflexivity, and open dialogue ● concept-based-problem-based, case-based, and simulation learning ● authenticity and applicability of knowledge to real world inter-professional and interdisciplinary contexts ● provide safe learning climate to promote openness to and respect for diverse opinions ● encouragement to challenge status quo and support different value systems to deepen understandings 	<ul style="list-style-type: none"> ● application assignments and/or portfolio supporting application to students' individual employment context or interests ● case-based assignments and presentations ● debates and constructive dialogue in pairs or groups ● complex decisions grounded in evidence-informed perspectives ● quality of capstone outcomes and achievement of goals outlined in learning contract

responsible research; and d) The ability to appreciate the broader implications of applying knowledge to particular contexts			
5. Level of Communication Skills The ability to communicate ideas, issues, and conclusions clearly.	A. articulate integrated understandings of health sciences to diverse audiences B. formulate informed and convincing arguments within inter-professional and interdisciplinary teams C. express value judgments with appreciation of others' value systems	<ul style="list-style-type: none"> ● inter-professional and interdisciplinary nature of courses provides multiple opportunities to express ideas, co-construct understandings, and respect contributions of others ● online synchronous and asynchronous learning support active dialogue in oral and written forms ● simulations and case studies are integrated within courses to provide a platform for analysis and written and /or oral critique 	<ul style="list-style-type: none"> ● presentations: oral, infographics, video, animation, collaborate ● group discussions, essay, and case study analyses ● reflexivity through dialogue, self-reflection, and peer feedback that reflects respect and appreciation of others' values ● conference simulations ● quality of capstone outcomes and achievement of goals outlined in learning contract
6. Awareness of Limits of Knowledge Cognizant of the complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines.	A. critically appraise the inherent complexities of human health and health systems B. evaluate the diversity of perspectives on health and health care	<ul style="list-style-type: none"> ● inter-professional and interdisciplinary nature of courses in the program encourages reflexivity and co-creation of knowledge through online dialogue with a community of scholars. ● in-depth analysis and critique of information from multiple perspectives promotes healthy debate of viewpoints with a view to deepen personal and others' value systems 	<ul style="list-style-type: none"> ● inter-professional and interdisciplinary interaction ● active online presence ● evidence of seeking guidance for personal professional development and contributing to others' ideas ● reflexivity through dialogue, self-reflection, and peer feedback ● quality of capstone outcomes that reflects achievement of learning contract goals and awareness of future learning direction

The goals of the proposed AHS field are threefold. First, to provide students with a depth and breadth of knowledge in the health sciences. Second, to facilitate learning opportunities for engagement in both structured and self-directed knowledge synthesis and knowledge application in authentic, interprofessional contexts. Third, to optimize students' capacities to make meaningful contributions to the health and wellbeing of people across Canada and worldwide. These goals are achieved through successful completion of seven courses that all are provided via online platform (OWL) and available via the Applied Health

Sciences Grad Diploma (see Appendix B for course descriptions) or current fields of the MCIsc program (Appendix A). Required coursework includes three foundational courses and four elective courses taken across a number of areas of concentration (see list below). Two of elective courses are from one area of concentration to provide opportunities for depth of knowledge, while the remaining two elective courses are selected from across of the other areas of concentration, thus providing opportunities for breadth of knowledge. A mandatory orientation module at the outset of the AHS field curriculum provides students requisite background in the program philosophy and pedagogy, information technology skills for ensuring optimal participation in the program's online courses, and an opportunity to develop a sense of a community of students.

Mandatory Foundational Courses taken by all students enrolled in AHS field:

- APPLHSCI9001 (0.5 FCE) Critical Thinking and Critical Analysis in Health Sciences
- APPLHSCI9013 (0.5 FCE) Methods in Critical Appraisal **OR** PT 9600 (0.5 FCE) Quantitative Research Methods
- APPLHSCI9014 (1.0 FCE) Knowledge Synthesis and Application Capstone **OR** PT 9630 (1.0 FCE) Research Project Experience

○ **Elective Courses by Area of Concentration:**

Area of Concentration: Determinants of Health and Health Equity

- APPLHSCI9002 (0.5 FCE) Equity and Health Systems
- APPLHSCI9003 (0.5 FCE) Global Health
- APPLHSCI9004 (0.5 FCE) Mental Health
- APPLHSCI9005 (0.5 FCE) Nutrition

Area of Concentration: Health across the Lifespan

- APPLHSCI9006 (0.5 FCE) Dementia and Mental Health in Aging
- APPLHSCI9007 (0.5 FCE) Mobility in Older Adults
- APPLHSCI9008 (0.5 FCE) Health and Well-being in Childhood & Youth

Area of Concentration: Health Leadership: Toward Enhancing Health Services, Systems & Policy

- APPLHSCI9009 (0.5 FCE) Project Management
- APPLHSCI9010 (0.5 FCE) Health System Quality Improvement
- APPLHSCI9011 (0.5 FCE) Health Services, Systems and Policy
- APPLHSCI9012 (0.5 FCE) Program Evaluation

Knowledge Synthesis and Application Capstone Experience. (APPLHSCI9014 FCE=1.0). The Knowledge Synthesis course will resemble a capstone project, wherein theoretical concepts and application of learning encountered throughout this field are reflected upon, analyzed, and synthesized into a meaningful whole. The course will provide the student with the unique opportunity to integrate their theoretical and practical knowledge, skills, and abilities into a constructive, authentic, and complex intellectual experience of relevant to them, and within a community of scholars. The synthesis course will be unique to each student and the proposed learning plan will be negotiated with a faculty advisor for depth, breadth, and rigor and alignment with the achievement of program outcomes. “Knowledge synthesis can serve as a key curricular strategy to help students access, aggregate, and use knowledge in a rapidly changing research and practice environment” (Teel, 2014). The outcomes of the synthesis work can be used as a platform for crystallizing the learning achieved through dialogue and reflexivity.

4. A description of the current state of the program (in terms of the aspect under consideration); and a comparison to what the program will look like after the modification, highlighting the changes

The current MCIsc program with the approved fields of Wound Healing, and Manipulative Therapy is doing well (see description above). Adding two further fields to this successful non-thesis master’s program will allow us to build on the strengths of an existing program and tap into award winning teachers who are leaders in distance education and teaching with technology (e.g., Jackie Sadi, Marilyn Robinson award; Dave Walton, Teaching Fellowship in Innovation). Expanding enrollment in graduate programs is consistent with Western’s strategic plan.

Students in all fields (existing and proposed) would be able to take one of several courses that are available in different content areas to fulfill progression requirements that are common across the fields in the MCIsc Program (see Table 3) See Appendices A and B for list of course descriptions).

Table 3

Comparison of course requirement similarity of non-thesis master's programs across fields.

Fields	Wound Healing	Manipulative Therapy	Interprofessional Pain Management	Applied Health Sciences
Field Specific Course	PT 9660/9670 Assessment & Treatment Wounds	PT 9640/PT9650 Advanced Orthopedics	New Special Topics in pain management	2 courses within one Area of Concentration (AoC). 2 courses from remaining AoCs
Critical Thinking Professionalism	PT 9615 Professionalism and leadership Wound care	PT 9610 Advanced Professional (MT field)	Completion of 5 required competencies	AHS 9001 Critical Thinking
Critical Appraisal or Research Methodology	PT 9600 or APPLHLTH SCI 93001	PT 9600 Quantitative Research Methods	Critical Reasoning and Creative Problem-solving	AHS 9013 Critical Appraisal and Evidence-Based Practice

Scientific inquiry	PT 9630 Research Project Course	PT9630 Research Project Course	Scholarly Product	Knowledge Synthesis and
Internship	PT 9620 Clinical Mentorship	PT9620 Clinical Mentorship	Clinical Mentor interactions 15hr total	Capstone Experience
Clinical Mentorship	100 hours total	150hrs total		

The two new fields (IPM and AHS) will be delivered entirely using distance education with no residency requirement to be on campus. Therefore, we will be able to enroll international students in these unique fields.

- **Admission Requirements:** The admissions requirements for both new fields align with the current MCISC admissions requirement of a baccalaureate degree from a recognized university with at least a (B) standing (or equivalent grade point average) over the final two years of the program. The MCISC also requires, for admission, a current license to practice as a health professional in Canada. Students in the IPM field will, in addition, be required to hold a clinical appointment as a health professional. The MCISC license-to-practice admissions requirement will be waived for students in the AHS field.

5. The timeline for introducing the modification:

We proposed to introduce the two new fields in September 2019.

6. An explanation of how current students will be affected by the modification and a plan for ensuring current students are not negatively affected by the change

Current students in the MCISC program typically complete all program requirements within one year, therefore, the proposed changes will not directly affect current students. We are proposing new fields within an existing graduate program. No students are currently enrolled in these fields. For new students starting in existing fields (WH and MT), expanding fields in the MCISC will allow more choice for courses and provide a greater diversity of background in the discussion forums and learning groups.

7. A description of how the modification may affect any other programs and students in other programs (e.g., how the modification may affect students in a collaborative or a joint program)

By positioning the MCISc as a Faculty-wide graduate program, the MCISc program can access a wider array of supports. The addition of two fields will require two additional faculty members to serve as Leads, which will affect service provided to their home Schools. The additional course offerings afforded by integrating with the Graduate Diploma in Applied Health Sciences will provide a broader range of course offerings for the MCISc students.

8. Evidence that all appropriate consultation has taken place (e.g., with SGPS, any affected programs)

We have consulted with the current members of the MCISc program committee, members of the School of Physical Therapy committee, the Director of the SPT, Faculty of Health Sciences Dean Garland, Associate Dean of Graduate and Post-Doctoral Studies Ruth Martin, FHS Director of Operations and Finance Sarah Padfield, both the Vice-Provost and Associate Vice-Provost of the School of Graduate and Postdoctoral Studies. We have also conducted extensive consultation with experts across relevant disciplines including interprofessional and competency-based education. To date all parties have endorsed these new fields.

Curriculum Vitae

Name:	Zoe Leyland
Post-secondary Education and Degrees:	<p>Wilfrid Laurier University Brantford, Ontario, Canada 2007-2011 B.A. (Hons) – Health Studies</p> <p>The University of Western Ontario London, Ontario, Canada 2015-2017 MPed – Curriculum & Pedagogy</p> <p>The University of Western Ontario London, Ontario, Canada 2017-2021 Ph.D. – Health Professional Education</p>
Honours and Awards:	<p>Ontario Student Opportunity Trust Fund Bursary Society of Graduate Studies 2018</p> <p>Travel Award Faculty of Health Sciences 2019</p> <p>Travel Award Health Rehabilitation Sciences 2019</p> <p>Nan Philipson Award Graduate Teaching Assistant 2020</p>
Related Work Experience	<p>Graduate Teaching Assistant The University of Western Ontario 2017-2021</p> <p>Standardized Patient The University of Western Ontario Schulich School of Medicine & Dentistry Clinical Skills Learning Program 2018-Present</p>

Publications:

1. Z.A., Leyland & D.M., Walton (2021). “The World Upside Down”: Clinical Encounters with the First Cohort of a New Pain-Focused Post-Professional Clinical Master’s Degree Program in the COVID Era, *Pain Medicine*. DOI: <https://doi.org/10.1093/pm/pnab160>
2. Z.A. Leyland (2021). “Maybe I Would’ve Been More Comfortable in my Ignorance?”: Exploring Future Physical Therapist’s Lived Experience of an Elective Pain Course, *UCJP Canadian Journal of Pain*, Manuscript ID: 1906795
3. Z.A., Letwin (2018). Working towards developing an interprofessional pain management curriculum for clinicians, *University of Western Ontario Medical Journal*, 87(1), 19-21.
4. J.Y., Lee, S.D., Guy, M.J., Lukacs, Z.A., Letwin, M.F., Fakhereddin, I.J., Al-Nasri & S. Salim (2018). Management of fibromyalgia syndrome: Cognitive behavioral therapy (CBT) for healthcare professionals, *University of Western Ontario Medical Journal*, 87(1), 34-37.